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The British Architect.

LONDON: FRIDAY, JANUARY 4, 1901.

THE NINETEENTH CENTURY.

THE dawn of the twentieth century is brighter with hope for the art of architecture than was the commencement of the century which died with the close of the past year. Nothing could well have been more hopeless than the architectural outlook at the beginning of the eighteenth century. Nor did the prospect brighten till the century had more than half run its course. Then, with the era of the Gothic revival, architecture became again a living art. It was, it is true, but a resuscitation of a style that once had been, but it was so handled by those whom it inspired that the revival was by no manner of means merely a dead repetition of a dead style. Indeed, it ultimately became the outlet for some of the very best and most original architectural effort of the century. We are told by candid critics that Gothic architecture is dead, and can never live again. That may be so for aught we can tell, but, at the same time, it is a certain fact that the Gothic revival of the nineteenth century marked a distinctly progressive era in architecture, the results of which constitute a very real and permanent page in architectural history.

England now stands easily first amongst all the nations in regard to her domestic architecture, and for this result the nineteenth century is largely responsible. From the time when Norman Shaw and Eden Nesfield first began to charm us with their original treatment of old work, so skilfully adapted to modern requirements, down to the present we have advanced the domestic architecture of this country to a point beyond which it seems difficult to imagine further progress in the direction of convenience, if not of art.

In the architecture of our public buildings the dead century has not, perhaps, left us with so conspicuous a note of progress. But fine monumental structures have been erected of Gothic and Renaissance type. On the whole there is indeed much to encourage the hope that even the present generation may see yet greater architectural progress, and—who knows?—*perhaps* even a new national style!

The foundation of the Royal Institute of British Architects, and the multiplication of architectural societies all over the country, together with the institution and rapid progress of an organised system of education, and the gradual consolidation of architects as a profession, are also features which mark the architectural progress of the century.

Nor should we omit to make mention of the revival that has taken place in regard to the crafts connected with architecture and building, nor yet of the great impetus given of late years to the progress of the decorative arts, coupled with which the name of William Morris stands out, perhaps, the most prominently.

There have been, likewise, important developments in construction and materials during the latter part of the century. Roofs and floors are for the most part constructed on quite different principles, and with wholly different materials. Architects have now a practically unlimited range of materials to choose from, and iron and steel have become a staple factor in the construction of all large buildings. Now-a-days, too, an architect has not to wait for indefinite periods for the supply of joinery and other fittings, thanks to the introduction of wood working and other machinery, although that is not always an unmixed blessing. Metal lathing, fibrous plaster slabs and many other similar materials likewise come to his aid in the facilitating of expeditious building. In sanitary appliances and the general hygienic arrangements of a building, we have now a tremendously different state of things to chronicle to that which obtained at the beginning of the century. Heating, ventilating and lighting are altogether on different lines, and the old order of things would not now be tolerated. We have also become concerned in regard to fire-resisting construction, and there has been a considerable revolution in this respect, of which the preparation of non-inflammable wood and fire-resisting glazing are not the least notable features.

All things considered, therefore, we open the new century with a condition of things, which, as regards architecture should afford us good reason to take a really hopeful view of the future. We have read many pessimistic utterances during the past few days concerning the national outlook, but they can have no application to architecture. So that, with a good hope and sincere desire, we wish to each and all our readers.

"A HAPPY AND PROSPEROUS NEW YEAR."

THE PAST YEAR.

THE last year of the nineteenth century has not been in anywise remarkable so far as British architecture is concerned. A number of important building projects have been initiated, it is true, but they do not appear likely to lead to any striking development in architectural art. The designs submitted for the frontages of the eastern portion of the Strand, as it is to be, when the new thoroughfare to Holborn is opened out, by no means realised the expectations that were formed when the names of the architects invited to send in designs were made known. The conditions were scarcely favourable, perhaps, and the time allowed for their preparation was somewhat short. But, anyhow, none of the invited architects rose to the height of a great occasion, and the opportunity for a fine architectural development was lost.

The competition for the Old Bailey Sessions Court, after an unconscionable delay, came to a final settlement in June, when the design submitted by Mr. E. W. Mountford, fairly earned the first place awarded it by Professor Aitchison, R.A., the assessor, was duly approved and adopted by the Corporation. Two of the competitors from whom we expected much, Mr. Brydon and Mr. Hare, fell considerably short of their reputation. Mr. Baggallay was distinctly successful in the exterior treatment of his design, and Mr. Mountford gave us once more an excellent example of judicious and economical planning.

The new Government Offices and the War Office schemes are advancing, as an inspection of the foundations of both structures in Whitehall will show. The decease of Mr. William Young, the architect for the War Office, which occurred only a short time since, is a matter for regret. The work in connection with the South Kensington Museum extension proceeds apace, and it is also to be noted that Mr. Webb's Charterhouse Buildings at Horsham are all but completed. Mr. Bentley's great Roman Catholic Cathedral of Westminster now stands practically complete so far as regards the shell. Its campanile is now over 182 ft. in height, to which 92 more are to be added. From first to last the cathedral has cost over £135,000. The date of its opening and dedication has not yet been definitely decided, but it will not be later than June, 1902. Certain chapels are to be fully decorated and enriched with their marbles and mosaics in order to convey some idea of what the cathedral as a whole will be like. The chapels selected for immediate treatment are those of St. Gregory and St. Augustine; that of St. Joseph; and that of "The Holy Souls." The Glasgow Exhibition buildings, for which Mr. Jas. Miller is the architect, are practically completed, and the opening next May is being looked forward to with considerable expectation by Glasgow folks.

Of the many building projects throughout the country it would be impossible in the space at our command to record here. They have been dealt with from time to time in our columns.

Competitions for public buildings of a minor character, as also for hospitals, workhouses, and the like, have been plentiful enough, and the business of building seems to have been generally brisk. So that we should say the profession cannot have had an idle or unprofitable year of it, in spite of the greatly increased prices of building materials, though we know there must have been many to whom even a small accession of business would have been only too welcome. And this leads us to the reflection that architecture, like other professions, is becoming overcrowded. The R.I.B.A. examinations last November

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tell a tale, which, whilst encouraging enough in one way, is rather saddening in other respects. For there is really no prospect for all these would-be architects, unless they possess some good financial backing and plenty of family influence and interest. Between apprenticeship and the possession of a snug little architectural practice of one's own there lies a great gap of ill-paid work and disappointing effort. For every student that scores a success, and finds his way into a fairly lucrative position or business, there are many who discover little but respectable starvation. This is a condition of things which neither a higher standard of professional education, nor the making of architecture a close profession are likely to remedy to any appreciable extent.

The obituary of the year has not been unduly heavy, but one regrets to note the inclusion of the following names:—Mr. William Butterfield (R.I.B.A. Gold Medallist); Mr. Charles Barry, F.S.A. (R.I.B.A. Gold Medallist); Mr. William White, F.S.A.; Mr. William Young, F.R.I.B.A. (architect of Glasgow Municipal Buildings and of the new War Office); Mr. W. J. Anderson (director and lecturer in connection with the department of architecture at Glasgow School of Art, and author of "The Architecture of the Renaissance in Italy"); Mr. F. W. Stevens, C.I.E., F.R.I.B.A., architect of the principal public buildings in Bombay; and Mr. Henry Currey, F.R.I.B.A. (architect of St. Thomas's Hospital). Then there was the decease of John Ruskin, whose name is to be held in reverent memory for the great work so long ago accomplished. One of the pioneers and apostles of the great sanitary reforms of the latter part of the past century also passed away in the person of Mr. Rogers Field.

The R.I.B.A. Gold Medal went abroad last year, the recipient being Professor Rodolfo Amadeo Lanciani, Italy. Mr. John Belcher was elected an A.R.A., and Mr. Beresford Pite became Professor of Architecture at the Royal College of Art. Sir Thomas Drew, R.H.A., F.R.I.B.A., was elected President of the Royal Hibernian Academy.

The Royal Institute of British Architects have, through their Council and the various committees, concerned themselves, as usual, with a variety of questions relating to art and practice. The proposal to alter the steps of St. Martin's Church was dealt with, and the London County Council, owing to the R.I.B.A. Council's representations on the matter, declined to have anything to do with the proposal. Amendments to the "Suggestions for the Conduct of Architectural Competitions" have been drafted, and the Council passed a resolution deprecating the practice of architects putting their names on boards or hoardings during the construction of buildings of which they are architects for the purposes of self-advertisement. The Council have also dealt with cases of competitions where the conditions have been bad, or the results not in accordance with professional right and usage, and in other ways the practical work of the Institute has been efficiently and usefully maintained.

One of the important architectural events of the year was the Architectural Congress, held at the Royal Institute of British Architects in June last. This proved to be a very successful gathering. The papers read were excellent, and the discussions for the most part practical and useful.

The Paris Exhibition buildings by no means won unstinted praise from English architects, and our own view of them brought us to the conclusion that English architects could have done quite as well—perhaps better. The English Pavilion was a mistake—being simply a replica of an old example. It would have been infinitely better to have let Mr. Lutyens make a design of his own. We are sure the result would have been vastly more satisfactory. Of course the proper way would have been to make it the subject of a national competition amongst English architects. The awards to English architects were simply ridiculous, for though the merits of some were fairly recognised, those of others were most absurdly discounted. Fancy Basil Champneys and Beresford Pite as bronze medal architects!

The question of the appointment and functions of the professional assessor in architectural competitions formed the subject of the 99th symposium of our "Friends in Council," and was contributed to by 31 of the leading practising architects of the country. That one could expect them to be all of one mind upon such a debatable subject was not likely. But they were, for the most part, in agreement as to the essential necessity of a properly qualified assessor being appointed, and that he should come on the scene at the very inception of the competition, and so advise the promoters in regard to the preliminary proceedings and the drawing up of the conditions. The discussion was one of special interest and value from an architectural and practical point of view.

The literature of the year appertaining to architecture and accessory arts has not been overwhelmingly great. We may just mention the following books that have been issued: "Scottish Architectural Details," by John W. Small; "A History of Gothic Art in England," by Edward S. Prior; "Stairbuilding and Handrailing," by William and Alexander Mowat; "Old Colonial Houses at the Cape," by Herbert Baker; "The Art and Craft of Garden Making," by Thomas H. Mawson: "Ornamental Details of the Italian Renaissance," by G. A. T. Middleton and R. W. Carden; "Art Needlework," by Lewis F. Day; "Samplers and Tapestry," by Marcus B. Huish, LL.B.; and "Later Renaissance Architecture in England," by Belcher and Macartney.

We should not close this brief reference to some of the more important architectural events of the year without allusion to the Building Trades' Gift to the Nation, consisting of the erection at Bisley of six homes for discharged soldiers. The homes were designed by Mr. Edwin O. Sachs, the originator of the scheme, and one of the blocks of homes was illustrated in our issue of the 30th of March last.

COVENTRY PATMORE.*

A DELIGHTFULLY interesting biography is Mr. Basil Champney's "Memoirs and Correspondence of Coventry Patmore." To those who know and admire Patmore's poetic and literary work these two volumes will surely appeal with irresistible charm. For Mr. Champneys has done his work very thoroughly and completely, thanks, in some large measure, to the invaluable co-operation of Mrs. Patmore, which secured for him a not inconsiderable portion of the wealth of detail which the work contains. Even those who may not be able to claim an intimate acquaintance with the genius and work of Patmore cannot but discover a real interest in the reminiscences and facts of his career. For Patmore was not merely a poet of the first rank and a clever essayist, but he was in himself a most interesting personality, with a philosophy of life both curious and original.

The ideal genius usually has the fates dead against him at the outset. He is born poor; has cantankerous parents who order his life in a groove completely opposed to all his tastes and desires; cannot exercise his talents save in secret and at considerable physical cost and discomfort; and in the end has to break loose from everything and everybody in order to secure his mental freedom. There was nothing of all this in Patmore's case; quite the contrary. His father, P. G. Patmore, was a well-known literary man, and the family circumstances were easy. Besides which his literary heritage was carefully nursed by his father, who fostered in every possible way his son's predilection for letters. In fact, there grew up such a close comradeship between father and son that the inherited taste for literature was nourished and developed under congenial circumstances rarely met with. Moreover, not only did Patmore's father share his son's interests, and advise him in his reading and studies, but early introduced him to the acquaintanceship of men and women of literary and artistic fame. Perhaps, too, it was as well for his future that he had only six months' regular tuition, and that in Paris! He studied various subjects "as the humour took him," and we are told that "he never became reconciled to any form of academic life, and to the end maintained that home education was, when circumstances allowed, generally preferable to that of the schools." As a student Patmore was a hard-working enthusiast, and diligently applied himself to whatever study he seemed specially to favour for the time being. At one time he thought he would

* Memoirs and Correspondence of Coventry Patmore. By Basil Champneys. Two Vols. Price 32s. London: Geo. Bell & Sons.

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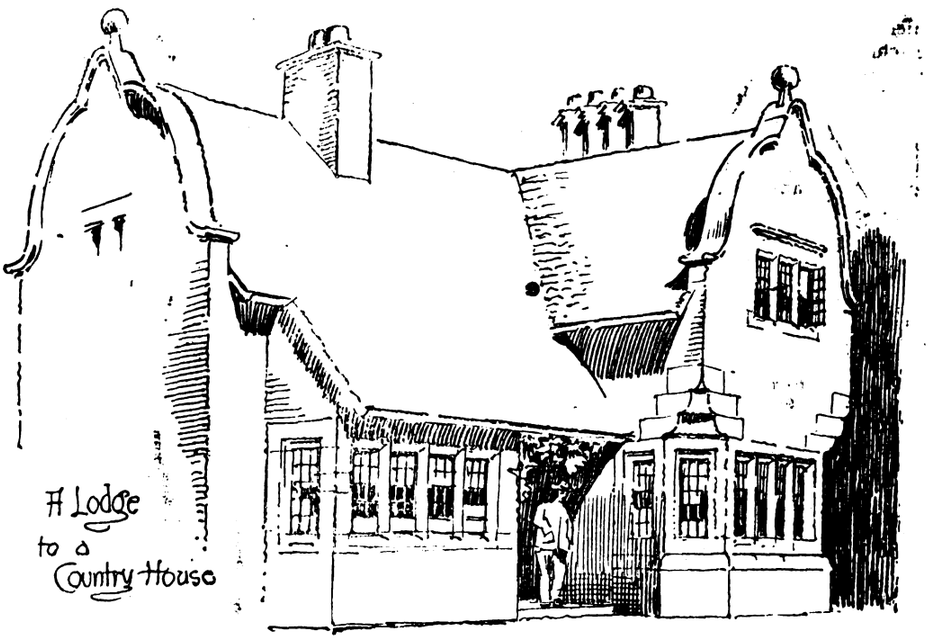
be an artist, and succeeded in carrying off the silver palette of the Society of Arts in 1838. Then he became enamoured of science, and his father fitted him up a laboratory where he worked incessantly. Afterwards he had an idea of taking orders.

But all this study was good preparation for his life's work, and when he had abandoned the idea of taking orders and exhausted his enthusiasm for science, he finally betook himself definitely to the career of a poet. Even his early poems seem to have created an unusual stir amongst the critics, owing, perhaps, something at least to the father's literary connection. Coventry Patmore himself, however, does not appear to have accepted the flattering things said about these poems as the whole truth, and nothing but the truth. Indeed, he soon discovered that their publication was premature, and labelled them "trash" and "rubbish," describing them in a letter to a friend as "an object lesson in faults of style and subject." Nevertheless, he gained a definite advantage by these early poems, since they gave him an introduction to literary circles as a worker, and no longer merely as his father's son. He had gained a footing on the literary ladder, and with kindly appreciative encouragement from men like Leigh Hunt, Sir E. Bulwer Lytton, John Forster and others, it only remained for him to persevere. There was, indeed, special need for perseverance since his father became financially heavily involved, and Coventy Patmore found himself left to find a living as best he could. But in spite of his great gifts he had hard work to scrape together twenty-five shillingsa week by his writing, even though he often worked not less than sixteen hours a day. Hard work and poor living for some fifteen months ensued, and then, through the kindness of Mr. Monckton Milnes, he obtained an assistantship in the Department of Printed Books in the British Museum, an appointment he held for some twenty years. And it is worthy of note that at the end, after reading tens of thousands of books, he came to the conclusion "that, of the forty miles of shelves in the British Museum, forty feet would contain all the real literature of the world!"



After his appointment at the British Museum came his marriage, and his introduction to Woolmer, Millais, Holman Hunt, Gabriel Rossetti, and others of the Prae-Raphaelite Brotherhood, as also the beginning of an acquaintanceship with Tennyson. Then he devoted himself to a severe study of the abstract laws of poetic art, whilst his marriage initiated him more deeply into his chosen subject. Several chapters are devoted to Coventry Patmore's first wife, Emily Augusta Andrews, who "was to the poet as would be to the painter a model who could inspire, suggest, direct, criticise, and herself supply touches of substantial value." To her "The Angel in the House," says Coventry Patmore, "owes whatever completeness it has, not to mention many of the best thoughts which stand *verbatim* as she gave them me." Scarcely ever can a poet, remarks Mr. Champneys, have owed to his wife so large a debt. With the publication of "The Angel in the House" Patmore's position as a poet of no mean order was assured. For although it met with a somewhat mixed reception at the hands of the critics it found many warm admirers, and both Tennyson and Browning expressed their high opinion of it. At any rate at the time of Patmore's death the sale of "The Angel in the House," without reckoning the popular edition published by Cassell's, has reached something like a quarter of a million copies. After "The Angel in the House" came the Odes, which, as poetry, constituted his best work, though the audience to whom they appealed was decidedly limited, since the appeal was "exclusively to genuine lovers of poetry as such." As Mr. Champneys says, "It is not every reader of verse who loves it for its poetic quality. The higher and purer the strain the smaller will be the number of those who have ears for it." Patmore's position as a poet, Mr. Champneys thinks, "will ultimately depend far more on the Odes than on the earlier poems, though these may continue to command the larger audience." With the completion of the Odes Patmore's career as a poet was practically ended.

As an essayist Coventry Patmore covered a wide field of subjects, including architecture, always more or less in philosophic vein, and these were gathered together at various times and reproduced in volume form. Much of his work in this direction was the outcome of his friendship with Mr. Frederick Greenwood, at the time editor of the *St. James's Gazette*, through which medium it was first published. Of these later prose writings Mr. Champneys remarks that "the form is indissolubly wedded to the thought, and the unison of the two displays that 'inevitable' quality which is one of the principal notes of first-rate art."

An interesting chapter is that which details his experiment in country life, and the remodelling and enlargement of the house he purchased. For a new frontage to this house he obtained a design from Mr. Bentley, who, he characteristically remarked, was "the only architect who knew more of architecture than I did myself." Eventually he gathered together his experiences of landed proprietorship into the form of a little book, entitled "How I Managed and Improved my Estate." The results set down herein prove Patmore to have been a man of business as well as a poet. Indeed, in the chapter here dealing with the purchase and remodelling of his Sussex house (Heron's Ghyll) and estate we get a glimpse of the practical man not usually supposed to be characteristic of the poetic nature. He opened up a stone quarry so as to raise the stone necessary for the building operations, and not only had he sufficient of "the finest stone seen in that part of Sussex" for his own use, but the stone was bought at almost any price he chose to name by builders of mansions and church and school restorers for many miles round. And when he had used all the stone he required he had to close up the quarry as the yawning gulf lay just under the walls of the building, and the quarrymen talked as if he were closing a gold mine. All through the building works Patmore exercised close personal supervision, determined to break through the various trade conventions which tended to increase expenditure. In pulling down the farm buildings, for instance, he insisted upon the

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brickwork being thrown down in masses instead of being taken down brick by brick as the men thought fit to do. In other matters, too, he effected considerable economy, and "generally secured that full value should be given for that which he paid." And the remarkable thing about it was that he carried out his interference and wishes without causing friction or resentment on the part of those employed. "The result was," says Mr. Champneys, "that he obtained a very attractive, though simple and even ascetic, residence at considerably less cost than might have been anticipated."

Mr. Champney's personal recollections of Coventry Patmore form one of the most interesting chapters of the first volume, whilst the letters which constitute the chief portion of the second volume are delightful reading, including as they do letters from Ruskin, Carlyle, Rossetti, Burne-Jones, R. H. Hutton, Cardinals Newman and Manning, John Forster, R. W. Emerson, Tennyson, Holman Hunt, Millais, and a host of other notabilities.

NOTES ON CURRENT EVENTS.

THE Royal Institute of British Architects are to consider, at their meeting next Monday evening, certain amendments proposed in the "Suggestions for the Conduct of Architectural Competitions." These amendments are few, and comparatively unimportant. To Clause 1 is added the suggestion that "the president of the Royal Institute of British Architects is always prepared to act as honorary adviser to promoters in their appointment of assessors." Clause 3, referring to the non-participation in any competition of any of the promoters of it, or the assessor appointed to adjudicate therein, is strengthened by the addition of the words, *and any employe of either*. Then we have an entirely new clause in Clause 9, which sets forth that "Each design should be accompanied by a declaration, signed by the competitor, stating that the design is his own personal work, and that the drawings have been prepared under his own supervision."

IT will be seen that the only really important amendment is the introduction of the new clause which calls upon competitors to sign a declaration that the design is their own unaided work. That there are such things as professional "ghosts" everyone is, of course, more or less fully aware. Therefore this appears to us to be a step in the right direction, seeing that there can be no question as to the unrighteousness of an architect passing off another man's work as his own. To the honourable architect the signing of such a declaration could not possibly be harmful, or undignified, since he would not wish any other than that the truth as to authorship should be declared. He would not be likely for a moment to desire that any credit due to another for assistance rendered should not be properly recognised. At the same time a signed declaration of this kind would entail no legal consequences, and might, therefore, be made a matter of evasion. Why not go a step further and call for an affidavit? This would carry with it some real fear of the consequences, and might thus warn off unscrupulous employers of "ghosts," when the mere signing of a statement would not have such an effect.

THE question of the status of the profession is to come up before the members of the R.I.B.A. at next Monday evening's meeting, when Mr. Lewis Solomon is to move the following resolution:—"That the Institute is responsible for the inferior position of architects as compared with that of other professions, and that a committee be appointed to inquire into the causes of this inferiority of status and to suggest remedies." It is a pity to waste time upon abstract resolutions like this. The Institute is no more *responsible* for the status of the architectural profession than it is for the general health of the medical profession. The responsibility rests with Mr. Solomon and every other individual member of the profession, and not with an incorporated association, however representative and influential it may, or may not be.

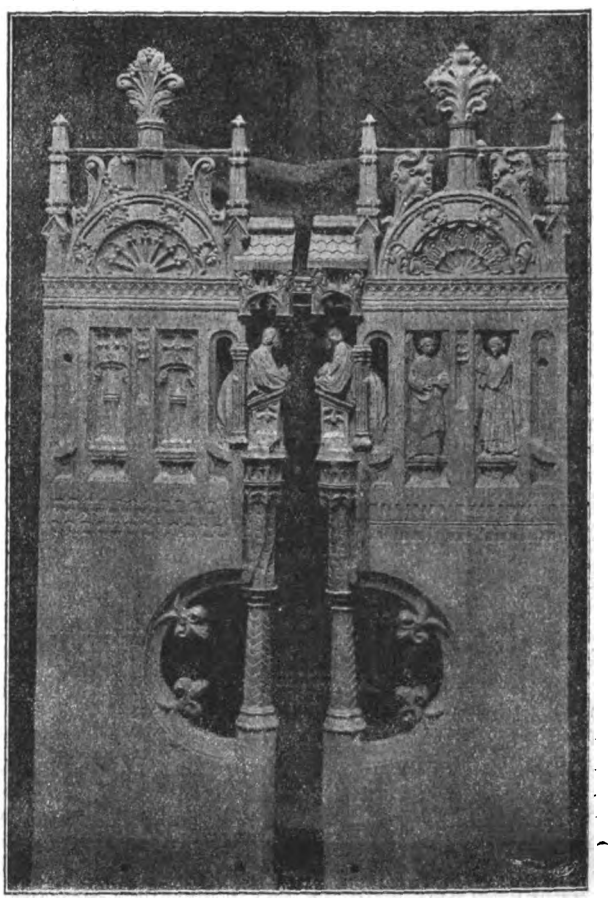
WE much regret to hear of the death of Mr. Edmund M. Wimperis, Vice-President of the Royal Institute of Painters in Water Colours, who died suddenly on Christmas Day. It is not, perhaps, often that popularity and real excellence of artistic production go hand in hand to the extent realised by Mr. Wimperis in his work. There was something very characteristically English in his robust and vivid technique, and he could realise artistic facts in a broad and vigorous manner which carried conviction with it. When we recall his windy skies with great white clouds trailing their sombre shadows over the heather and the field, his fine contrast of light and shade, rugged environments of tender light and colour with deep-toned shadows, and long perspective of undulating English landscape, we feel assured he has earned a distinguished and honourable place in modern English art.

MR. WIMPERIS was born at Chester in 1835. He came to London in early life, and was trained for the art of wood engraving, in which art, as long as it lasted, he worked for the *Illustrated London News* and in other directions. Afterwards Mr. Wimperis turned to water-colour drawing. When he had secured his recognised place in water-colours he went on to paint in oils as well. All this time he had been an active member of the Institute and took a large part in its removal to Piccadilly and in the erection of the Prince's Gallery. Some years since he succeeded Mr. Haag as vice-president of the Royal Institute, and, in the view of many of the members, would have been worthy to occupy the presidential chair on the resignation of Sir James Linton. Mr. Wimperis was an active member of the Artists' Benevolent Fund.

THERE are seven candidates for Fellowship and 23 candidates for Associateship of the R.I.B.A., to be voted for at the business meeting of the Institute on the 4th prox.

MR. F. E. P. EDWARDS, A.R.I.B.A., has been appointed City Architect at Bradford, at a salary of £400 per annum. There were 70 candidates for the post.

MR. RICHARD WILLIAM BINNS, one of the oldest Fellows of the Society of Antiquaries, died at Worcester on the 28th ult., aged 81. He was born in Dublin, became a partner in the famous Worcester porcelain works in 1851, and had greatly improved the quality of Worcester china.



CHOIR STALL ENDS—ST. DAVID'S CHURCH, EXETER

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IN the competition for the promenade extension at Bridlington the design of Messrs. Magnall & Littlewood, of Manchester, has been awarded the premium of 35 guineas.

IN connection with the recent limited competition for the reconstruction of the Glasgow Royal Infirmary, Mr. Hippolyte J. Blane, architect, Edinburgh, one of the competitors, has received the following letter from the City Chamberlain:—"Glasgow, 28th December, 1900.—Royal Infirmary Plans.—My dear Sir,—The envelopes of the unsuccessful competitors have been opened, and it will interest you to know that your set of drawings bore the letter 'B,' which received three votes as being first in order of merit.—Yours very truly, J. NICOL."

A SPECIAL committee of the Ruskin Union have reported in favour of a project for acquiring the house and grounds formerly occupied by Ruskin at Herne Hill for the purposes of a Ruskin museum, and also for founding a Ruskin settlement, with a library and collections of natural history and art.

IT has been found necessary to postpone the opening of the Exhibition of Modern Illustration in the Indian Section (Imperial Institute Road) of the Victoria and Albert Museum from Monday, January 7th, until Monday, January 14th. The private view will consequently take place on Saturday, January 12th, instead of January 5th as previously announced. The Exhibition will be open free every day: on Mondays, Tuesdays, and Saturdays, 10 a.m. till 10 p.m.; on Wednesdays, Thursdays, and Fridays, from 10 a.m. till 4 p.m.; and on Sundays from 2 p.m. till dusk. The Exhibition will remain open about three months.

THE Peterborough Cathedral Restoration Committee have issued the following notice:—It is with the utmost regret that the committee have to state that the funds at their disposal are entirely exhausted, and that consequently they are compelled to stop the works until further subscriptions are forthcoming. They earnestly trust, however, that such support may be accorded to them that the work may be speedily resumed and brought to a happy conclusion, and this ancient building restored in its beauty to future generations.

THE Market Cross of Inverness, which has been restored by Sir Robert Finlay as a gift to the town of Inverness, was unveiled by Lady Finlay last week. The cross has been restored under the care of Mr. J. H. Gall, architect, Inverness. It is placed against the façade of the Town Hall. The moulded base and sub-base are of red and blue granite, and embedded in the base is the Clachnacuddin Stone, which is described as the palladium of the burgh. The old shaft of the cross has been strengthened, and the moulded cap has been surrounded by a carved and polished final and the Scottish unicorn supporting the town's arms. The carved stonework was executed by Mr. Andrew Davidson, sculptor, in Rome.

THE repairs to the keep of Rochester Castle, arranged to be executed during the year 1900, are now completed. The work has been carried out under the supervision of Mr. George Payne, architect. Half of the interior of the building, on the southern side, as far down as the floor level of the state chamber, has been restored, and certain arches which were structurally unsafe have been made good. A gallery along the same side was in a very ruinous state, especially where the great crack occurred after the rebuilding of the south-east angle in the thirteenth century. In his report to the Rochester Corporation, Mr. Payne states that a large amount of the damage everywhere present in this gallery was due, as in all accessible parts of the keep, to the wanton destruction of arches and jambs in past times for the sake of the squared stones they contained. As these supports had been removed, it was deemed necessary for the stability of the fabric to replace them with Kentish rag. One outcome of the repair of the eastern wall of the keep has been to bring several interesting architectural atures to light, and these are now permanently exposed to view. The beautiful arcade dividing the state chamber has been successfully treated. Traces were discovered, whilst the central wall was being repaired, that the keep had at some period suffered from fire. The cleaning out of the well of the keep proved to be a laborious work. The total depth from the top of the central wall of the keep to the bottom of the well was found to be 136 ft., and the diameter of the well-shaft from 2 ft. 9 in. to 4 ft. At low tide the water in the well has a depth of 18 in., but at high tide it reaches 9 ft.

PRIEST'S DESK—ST. DAVID'S CHURCH, EXETER.

As usual, we have received from Messrs. Hudson and Kearns, 83, Southwark Street, S.E., some samples of their excellent assortment of diaries and blotting pads, specially suitable for the use of architects, surveyors, and builders. "The Architects' Diary," No. 13, is a most complete and useful professional diary, as also "The Builders' Diary." Besides the large amount of space devoted to the purposes of diary work, a great deal of most useful information appertaining to architecture and building is given, and we must not forget to note the excellent quality of the paper for writing purposes and the substantial cloth binding; both are very important points to be considered in the choice of a diary. The blotting pads vary in size and utility. There is No. 6, the simplest of all, with just the blotting pad, date indicator, and book diary. In No. 8 we have a much larger size, and a block of white writing paper running down the right-hand side of the pad for scribbling purposes, whilst over the date indicator and diary is a washable memo. tablet. No. 8A is an enlarged form of No. 8, and there is also a pad specially for the use of bankers. No. 4 is a portfolio pad comprising diary, interleaved with blotting, index, and a few pages for cash received and paid, pocket slide for pen or pencil, and blotting pad. We can thoroughly recommend Messrs. Hudson and Kearns's productions to the notice of our readers.

AT a joint conference, held at the Club Union Buildings between the Technical Education Committee and the instructors of the plasterers' classes at the various polytechnics throughout the London district, the following resolution was adopted:—"That all minor members of the union up to the age of nineteen years shall attend the

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nearest class to his residence at least six times in any one month during the session, and, failing this, he will be summoned before the Technical Education Committee for an explanation." The committee will exercise this discretion where students are not in a position to pay their fees. The union are determined to make their apprentices competent workmen, so that they may command full wages at the age of twenty-one. This is a real step in the right direction.

PENDING the opening of its new testing station, the British Fire Prevention Committee will issue reports on tests undertaken in the past year with Mural and Decorations' Company's floor, the "Cunnah-Wright" partition, the Williams' fire-blind, with two iron doors and two pairs of wood doors. Summaries regarding tests undertaken at the North Bank testing station are also in preparation. Regarding the committee's new testing station at Westbourne Park, a sub-committee of the executive will have charge of the arrangements, Mr. Ellis Marsland presiding

OUR ILLUSTRATIONS.

THE STRAND IMPROVEMENT SCHEME.

DESIGN BY ERNEST RUNTZ.

THE design submitted by Mr. Ernest Runtz in the recent competition for the new Strand building frontages is the first of the eight competitive designs to be illustrated with any approach to a fair understanding of the results of grouping and outline of the design. It will be seen that Mr. Runtz has not lost sight of the commercial necessities of the problem, and has endeavoured to produce a scheme which would be available for commercial purposes, and one, moreover, which would lend itself to modification in many ways that a heavy and dignified classic treatment renders almost impossible. The best parts of Mr. Runtz's scheme are the Gaiety Theatre block at the west end of the design, and the block designed for the *Morning Post* office. These are decidedly pleasing, and have the recommendation of combining a fair amount of dignity and breadth, with interest in detail, and picturesqueness of outline.

Of course the County Council have taken the heart out of the whole problem by making a sort of official pronouncement that a big official building for London in the centre of the group is an utterly impossible piece of extravagance. Nothing more ludicrous happens in any phase of Mr. W. S. Gilbert's charming opera "Utopia" than the framing of the invitation, issued to these eight competing architects, in such a way that they all assumed a central official building would be an acceptable, or even needful, feature, whilst almost the moment after the competitive designs are all received it is gravely declared that the central building is an impossible item! "Utopia" has been to our mind a greatly underrated production. It is startlingly typical of actual fact.

Now that any great central building is out of the question, and will not dominate the whole island site, calling for at least a glamour of respectable dignity on all the other buildings associated in the group, we might hazard the suggestion that all the eight architects be appointed to act in concert, and produce various blocks, under the guiding judgment of Mr. Norman Shaw, the assessor!

THE "HIGHLAND TAP," AND "COFFEE TREE TAVERN," BOSTON, U.S.A.

J. WILLIAMS BEAL, ARCHITECT, BOSTON.

THE practice of drinking beer in public is not followed in Boston to the same extent as in Germany, and, although this country is a democracy, the brewers and purveyors of beer and other intoxicating liquors are rather looked down upon by other classes of society. There is, moreover, a strong political party who attempt every four years to put what they call a "prohibitionist" president into office with the intent that thereby the supply of liquors shall be cut off.

Public drinking being thus somewhat in disfavour, it may be supposed the drinking places are not generally, in an architectural sense, interesting or beautiful. To the Highland Spring Brewery Company, of Boston, belongs the credit of trying to improve the appearance of these places. The buildings illustrated were erected at the suggestion of the senior member of the firm, from plans by Mr. J. Williams Beal, architect, of Boston.

The "Highland Tap" has wooden shingles on the exterior, with timber and plaster work in the gables, while the "Coffee Tree Tavern" is of brick, timber and plaster work. The interiors of both are very attractive, being finished in dark oak, the plaster having a rough surface. The open fireplace in the "Coffee Tree Tavern" is of fine red freestone. Both interiors are decorated in colour, and the windows have lead glazing in quaint patterns.

Coffee and lunches are served in these taverns, as well as liquors, and, although only erected a few years ago, the returns to the company have so far justified their expenditures that they contemplate erecting other buildings in a similar style. R. BROWN.

[These designs show a determination to depart from the common-place, and evidence the application of considerable care and thought to their detailed finish.—ED. *B. A.*]

ENGINEERING AND SANITARY NOTES.

BY CHAS. E. GRITTON, A.M.I.C.E.

BITS OF BYGONE.

SOME interesting explanation has recently been given of the methods used by the builders of the early cathedrals to determine the equilibrium of the arches and supporting columns. The various problems connected with their construction were solved by a graphic method, which involved the use of the "Bauwage," or building balance. This consisted of a flexible cord in the form of an inverted arch, passing over pulleys at either end, the cord being drawn into an equilibrium polygon by weights suspended at various points along the cord, each proportionate in position and amount to those which the arch would be required to carry at its various points. By means of weights connected with the cords passing over the pulleys at each end the system was supported and the horizontal force also measured. From the curve thus obtained, the various elements could be readily calculated, and a reliable method of construction devised. The system was employed by the so-called master builders, who were included in a guild that extended over Europe during the Middle Ages. Through this guild the traditions and higher knowledge of the building art were confined to a few masters in each country, and there is every indication that they were endowed with more than mere artistic feeling and intuition in carrying out their constructions. The graphic method described was used before 1585, but previous to that time it is hardly thought to have carried with it any special knowledge of the laws of statics.

A TOUGH JOB!

Heating all Outdoors.—An extraordinary requirement in a water-heating job is described in the letter below which was recently sent to the *Metal Worker* by a well-known contractor, who asks other men engaged in the heating business to express their views as to whether he may be fairly expected to heat a building with the windows *open*. Whatever the opinions expressed may be, it is his intention to bring them to the attention of his customers and abide by them. No stipulation was made for heating with the windows open in the original contract: "Last fall I installed a direct water house-heating plant with a guarantee of a capacity equal to 70 degrees in zero weather. I made the plant ample, as I usually rate a plant. I also placed a thermostat on it, which does work within 1 degree when the house is closed. But during the night the fire burns out in an effort to maintain 70 degrees with windows open to the number of four. The owner insists on 70 degrees with windows open; that it is ridiculous to ask a party to sleep with windows closed; that no decent person will do so; that I must maintain fire and heat as though the windows were closed. I wish to know if I am wrong in saying to the owner that this is an unusual thing to ask of a heating man, and unjust. If I am wrong I wish to know it."

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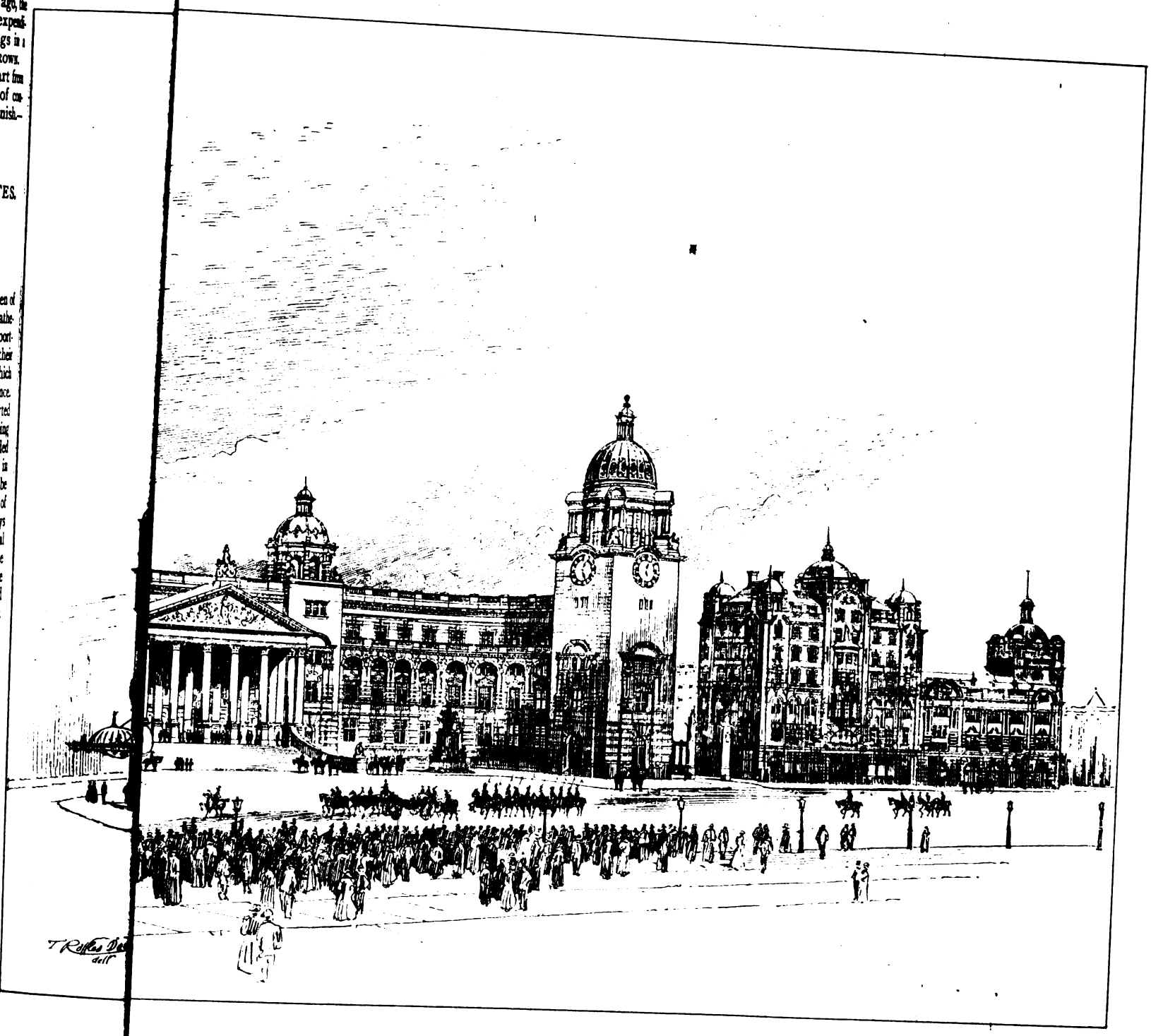

THE STRAND IMPROVEMENT SCHEME.
DESIGN BY EARNEST RUNTZ, ARCHITECT.

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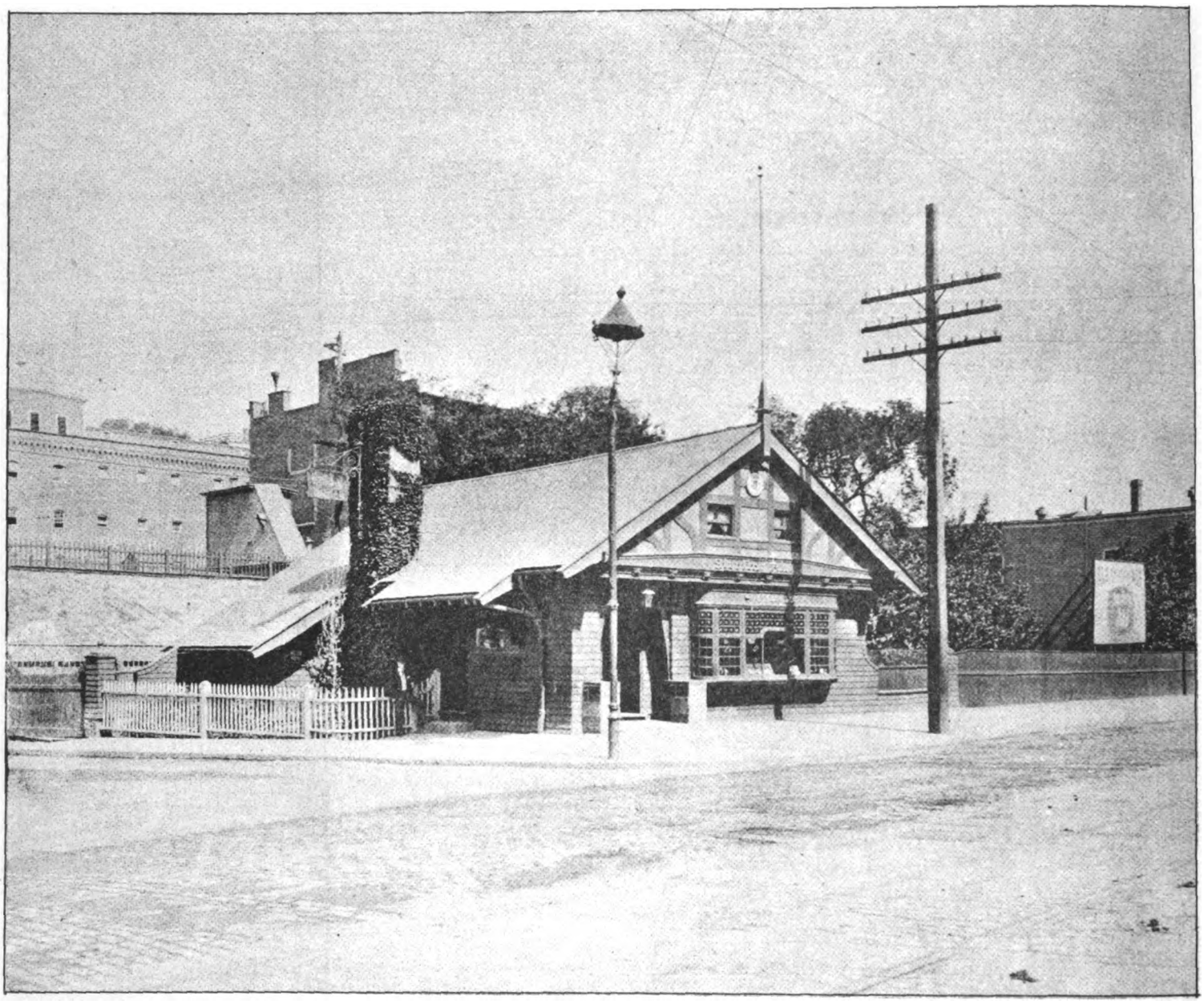
THE "HIGHLAND TAP" BOSTON U.S.A.



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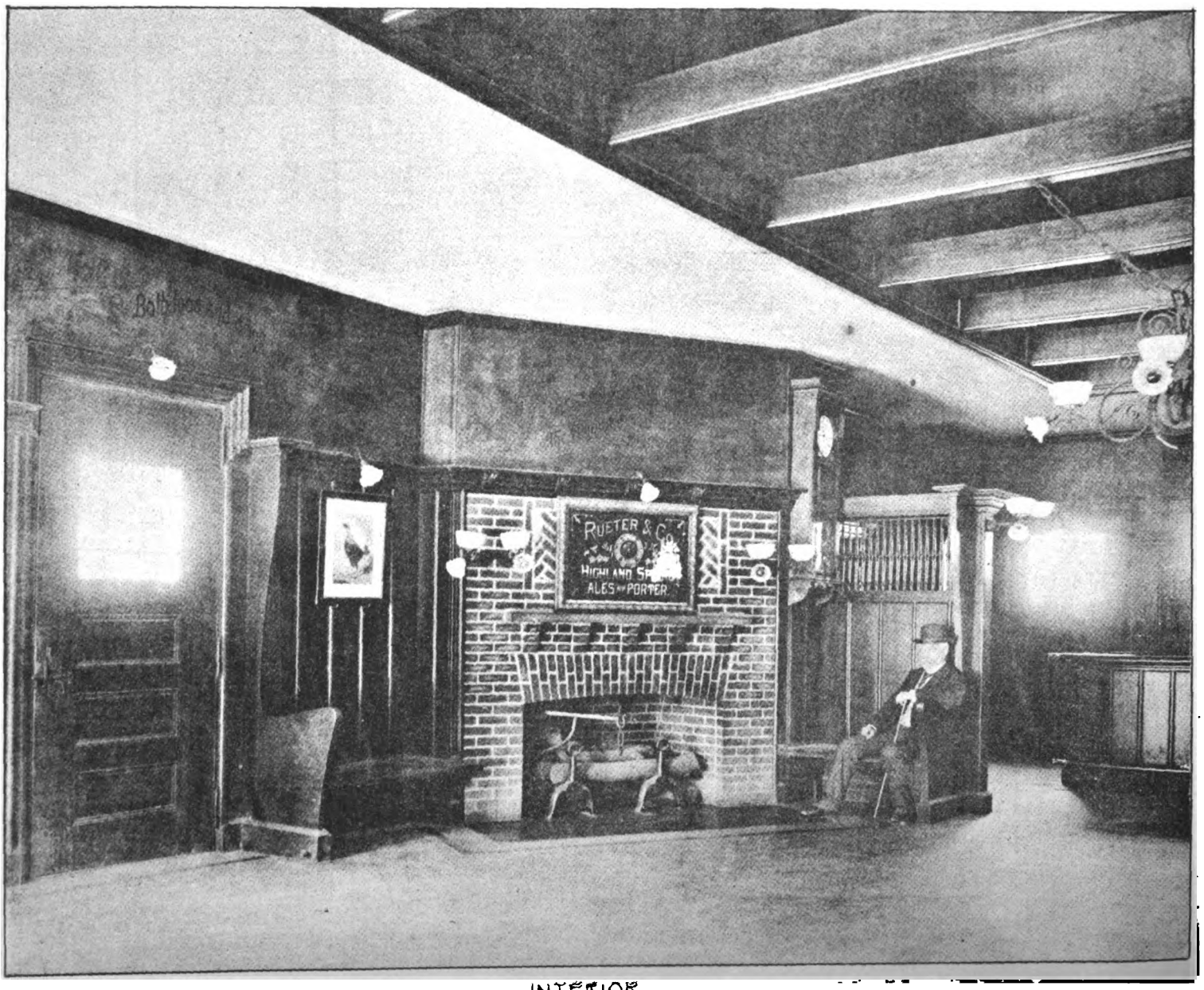

INTERIOR

AMERICAN COFFEE TAVERN

J WILLIAMS BEAL. ARCHITECT. BOSTON.

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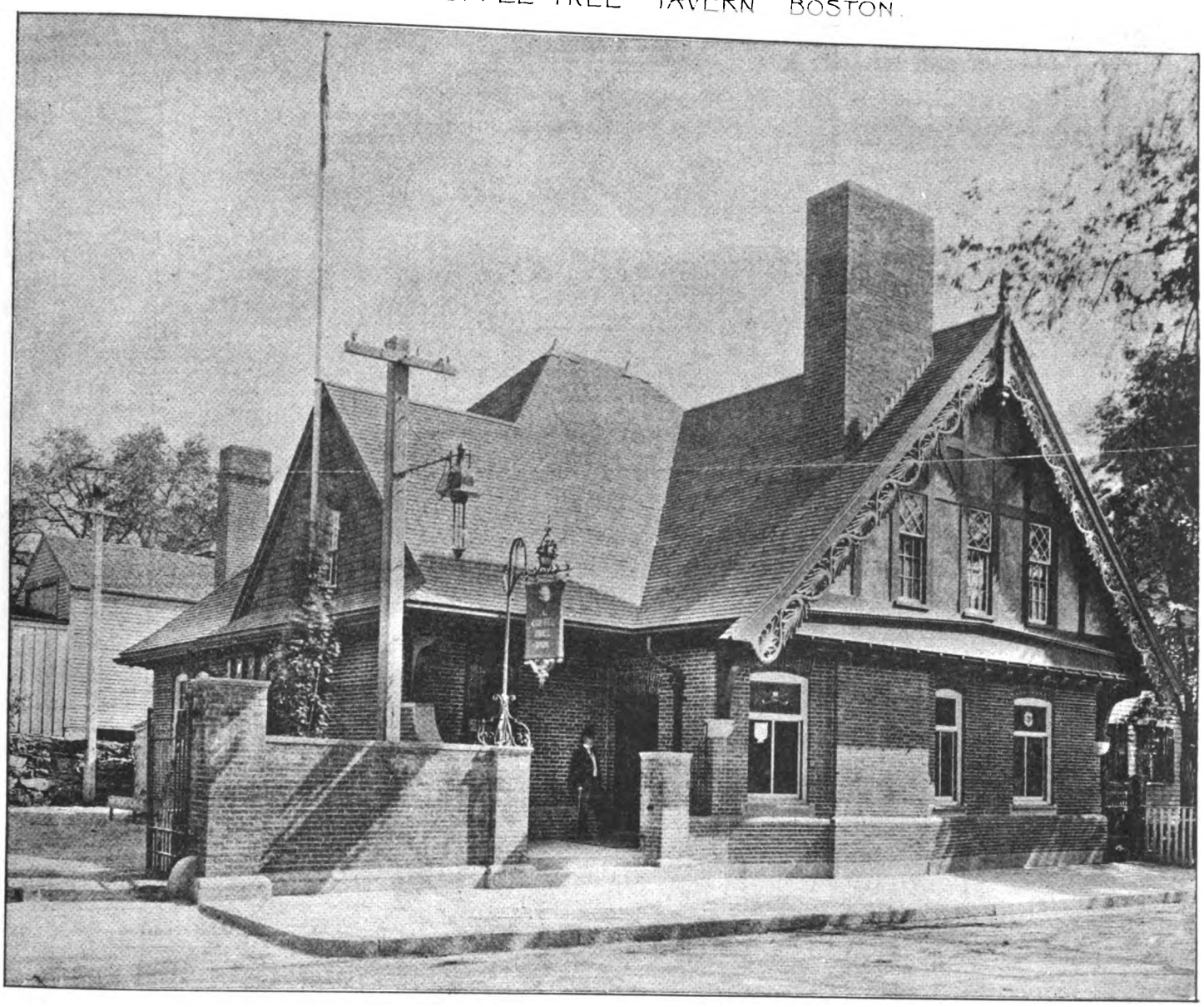
THE "COFFEE TREE" TAVERN BOSTON.



EXTERIOR

INTERIOR.

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AN AMERICAN COFFEE TAVERN

J. WILLIAMS BEAL, ARCHITECT, BO

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CHEAP DIAMONDS!

The view that carbon could be obtained in the crystalline form by subjecting it to a great pressure and heat, has been tested by M. Quirino Majorana with negative results, and the experimenter concludes accordingly that, to be obtained in the crystalline form, the element must be deposited from solution.

ELECTRICAL ENGINEER WANTED FOR THE LONDON COUNTY COUNCIL.

The London County Council requires the services of a fully-qualified electrical engineer, who has had experience in the construction of electrical tramways, and who will be directly responsible, under the Council's chief engineer, for the work of construction or reconstruction for electrical traction of the tramways belonging to the Council, and for the working of the generating station, plant, and electrical equipment of the tramways when constructed. The salary attached to the appointment will be £1,000 a year, and the latest date for receiving applications is Monday, January 14th next.

MEN OF NOTE.

"Men of Note in Finance and Commerce" is the title of a biographical business directory, with which is incorporated "Men of Office." Edited by Herbert H. Bassett, 1900-1901. London: Effingham Wilson, Royal Exchange, E.C. The work is not without value, but is marred by inaccuracies which a little more care would have avoided. For instance in the abbreviations I find this blunder, "A-Inst.C.E., *or* A.M.I.C.E.—Associate of the Institution of Civil Engineers." This is doubly wrong. A reference to the constitution of the Institution shows that an associate member must be a civil engineer by profession and practice; whereas associates (who are not entitled to the privileges of corporate membership) are *not* civil engineers by profession, but those "whose pursuits constitute branches of engineering, or who, by their connection with science or the arts, or otherwise, are qualified to concur with civil engineers in the advancement of professional knowledge."

INSANITARY TRAVELLING.

Mr. P. F. Mackenzie-Richards, A.M.Inst.C.E., in last week's *Public Health Engineer*, writes on the somewhat neglected question of lavatories in trains. He points out the urgent need for reforms, a need probably even greater on board ship, witness the way in which enteric fever seems to haunt certain steamers voyaging to the Antipodes. By the way, the perfect w.c. for yachts, to discharge properly under water, has still to be invented.

ACETYLENE ADVANCING.

Quoting from a recent report of H.M. Consul at Stuttgart, the *Board of Trade Journal* states that at the end of 1899 some 70,000 jets of acetylene were installed in Germany, which, estimating the illuminating capacity of the acetylene flame at 40 normal candle-power, gives a total of 6,800,000 candles. This means that acetylene has been substituted for 180,000 petroleum flames, 21,000 oil gas jets, and about 3,500 jets of other illuminants. The increase in the price of petroleum, and the decrease in that of calcium carbide, are gradually enabling the latter to supplant petroleum as an illuminant.

AN ASSET.

Reuter's agency is informed that the report of the experts sent out by the British South Africa Company to inquire into the reported find of coal in Rhodesia practically confirms the original statements made with regard to it. The coalfield is situated some 180 miles north-west of Bulawayo, and is known to extend over at least 400 square miles. The seams vary from 5 ft. to 16 ft. in thickness, and as the coal lies within 40 ft. of the surface it will be worked by means of inclines instead of shafts. It is estimated that at least 1,500,000,000 tons will be available after making an allowance of 20 per cent. for loss. In so large an area the quality naturally varies, but the experts declare that the coal is better than that now in use in the Transvaal, Natal, and Cape Colony, and in some cases compares favourably with the best Welsh coal. In view of the confirmation of the value of the discovery, it has been decided to take the Cape-to-Cairo Railroad through the centre of the coalfields and on to the Victoria Falls. The survey of this line is almost completed, and the commencement of the work of construction has only awaited the confirmation of the value and extent of the coal deposits.

THE COST OF PROSPECTIVE ENGINEERING WORKS AT HULL.

The Hull Corporation Bill, which has been deposited in the Private Bill Office of the House of Commons, will enable the Corporation to raise for the execution of street works, £560,000; for the construction of the new bridge, £36,000; for tramways, £27,000; and for purchase of land at Cottingham and waterworks, £33,000. The British Gas Light Company, Limited (Hull Station), Bill will empower the gas company to enlarge their works and to expend further capital. The company are already authorised to expend £400,000, and by the Bill this amount will be extended by £280,000. New works are contemplated for the manufacture of gas and residual products.

ELECTRIC TRAMWAYS AND ASPHALTE PAVEMENTS.

The destructive influence experienced by the passage of heavy electric tram-cars upon asphalte-pavements has been the subject of considerable experiment in Germany. The results have not been particularly encouraging, but much has been said lately in praise of a system which is shortly to be subjected to a practical test in Berlin. Contrary to ordinary practice, in which the tram lines are laid immediately upon a foundation of concrete, further resting in direct contact with the superimposed asphalte, the new method consists in laying the rails upon a bed of coarse gravel and running a line of hardwood blocks along either side. Experience has taught that ordinary pavements with gravel and stone foundations in place of concrete offer the greatest resistance to the influence of electric cars. It is assumed that the gravel or stone allows the rails more play, which is advantageous in that, despite great care in their manufacture, it is impossible to ensure exact uniformity with the gauge of the cars. The new method is also relied upon to reduce the noise caused by the cars running over the lines.

BOLTON JOLTING.

Something like a sensation has been created in Bolton by the report of the borough engineer (Mr. A. A. Day) on the state of the Bolton tramway system. When the Government inspection took place it was suggested by the inspector that the whole of the old lines would require relaying, the cost being estimated variously at from £40,000 to £70,000—expert opinion being nearer the latter than the former. Now Mr. Day reports that he discovers that the gauge varies at different points. Its effects are obviously disastrous to the cars. Oil grooves are "hammered" out of place as a result of jolting and twisting, the coils of motors are shifted and worn, axles have been found to give way through the crystallisation of the steel, wheels have been worn and loosened, and the cars themselves wrenched. In Dover, says the engineer, the difficulty was overcome by "trueing" the wheels to the gauge, but this is not possible in Bolton owing to the true gauge at one point being inaccurate at another, and he advocates the relaying of the whole system as quickly as possible. This does not apply to the new tracks, but it destroys all idea of profit for a considerable period.

RECORD ROADS!

After years of experiment the city authorities at Hamilton, Ontario, have discovered a pavement for streets which they have found to be durable, excellent, and cheap. The tests which have been made over a number of years on business streets show that tarred macadam makes not only a smooth and solid roadway, but that it can be maintained and repaired at very little expense. The first cost in Hamilton, where abundance of limestone is near at hand, is from 3s. to 3s. 8d. per square yard, and the authorities estimate that the cost of repairs in streets with heavy traffic is less than ½d. per yard per year, while asphalte costs over 1½d. By the addition of tar, the road becomes impervious to water, it is proof against frost in winter, and mud and dust are prevented in summer. It is easily repaired, and does not require scraping, so that much of the wear of the surface is avoided. A block of tar macadam on a business street with heavy traffic showed no perceptible wear after being laid down a year. In residential quarters, the tar macadam roadways are in good

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condition eight years after they were laid down, no repairs having been done in the meantime.

Success, however, in this, as in all cases of composite work of the same character, depends on the care with which the road is laid down at the outset; and the United States Consul obtained from Mr. Barrow, the head of the public works, information as to the process employed. Either stone or cement kerbing is placed before the road is commenced. The base consists of cement laid on broken stone or gravel, which is freely rolled with heavy rollers, the curve being designed to carry off water quickly. Upon this a solid bed of stone, at least six inches in thickness, is placed, the interstices being filled with small stone and gravel well rolled in. Over this comes a coating of gravel rolled hard, and then a layer of stone saturated with tar, the stones not exceeding two inches in diameter. These stones before being mixed with boiling tar (eight to twelve imperial gallons to the cubic yard) must be thoroughly dried, either in the summer sun or by exposure on heated plates, until all the moisture is expelled. After a thorough rolling another stratum of tarred stone of the same thickness and dimensions is added, rolled and covered with a layer of gravel and quarry chips, also mixed with tar. A top dressing of screenings is then added, and if a light colour is desired it can be obtained by adding cement.

Most of the stone used in Hamilton is machine-crushed, and limestone is used, chiefly, it is stated, because it is abundant locally. Granite or flint would certainly absorb less tar and bear more wear and pressure, but, on the other hand, it would also have the drawback of being more smooth and wearing to a slippery surface. Absolutely the best tar paving I have seen in England, after heavy wear, was made of nothing but limestone and hot tar.

PROPOSED REVISION OF R.I.B.A. "SUGGESTIONS FOR THE CONDUCT OF ARCHITECTURAL COMPETITIONS."

AT the business meeting of the R.I.B.A. on Monday evening next, the chairman will move the adoption of the amendments and additions indicated below, in the paper of "Suggestions for the Conduct of Architectural Competitions." The paper, as revised, reads as follows, the new clauses and amendments being printed in italics:—

1. The promoters of an intended competition should, as their first step, appoint one or more professional assessors, architects of established reputation, whose appointment should be published in the original advertisements and instructions, and whose decision should govern the selection of the designs.

The President of the Royal Institute of British Architects is always prepared to act as honorary adviser to promoters in their appointment of assessors.

All the designs sent in should be submitted to the assessors.

2. The duty of assessors should be—

(*a*) To draw up the particulars and conditions as instructions to competitors, and to advise upon the question of cost;

(*b*) To determine which of the designs conform to the instructions, and to exclude all others;

(*c*) To advise the promoters on the relative merits of the designs admitted to the competition, and to make a selection in accordance with the conditions.

3. Every promoter of a competition, and every assessor engaged upon it, *and any employé of either*, should abstain absolutely from competing, and from acting as architect, for the proposed work.

4. The number and scale of the required drawings ould be distinctly set forth, and they should not be more number, or to a larger scale, than necessary to clearly plain the design. If perspective views be required, it should be so stated; and they should be uniform in *size*, number, mode of colouring, *mounting, or framing* (*if any*), etc.

5. Competitions should be conducted in one of the following ways:—

(A) By advertisement, inviting architects willing to compete for the intended work to send in designs. The promoters, with the advice of the assessor or assessors, should make their selection from such designs. The author of the design awarded the first place should be employed to carry out the work.

(B) By advertisement, inviting architects willing to compete for the intended work to send in their names by a given day; with such other information as the candidate may think likely to advance his claim to be admitted to the competition. From these names the promoters, with the advice of the assessor or assessors, should select: (*a*) an architect to carry out the work; or (*b*) a limited number to compete, and each competitor thus selected should receive a specified sum for the preparation of his design. The author of the design awarded the first place should be employed to carry out the work.

(C) By personal invitation to a limited number of selected architects, to join in a competition for the intended work. Each competitor should receive a specified sum for the preparation of his design. The author of the design awarded the first place should be employed to carry out the work.

6. No design should bear any motto, device, or distinguishing mark; but all designs should be numbered by the promoters in order of receipt. Any attempt to influence the decision of the promoters, or of the assessor or assessors, should disqualify a competitor.

7. In every case the amount of premium or remuneration for the competitive designs should be fixed (the words "by the promoters acting" are now omitted) under the advice of the assessor or assessors, *and should be paid in addition to the usual professional charges for carrying out the work.* (The italicised portion stands as before, but is now strengthened by being put into italics.)

8. Where a deposit is required for supplying the instructions, it should be returned on the receipt of a *bona fide* design; or if the applicant declines to compete and returns the said instructions within a month after their receipt.

9. *Each design should be accompanied by a declaration, signed by the competitor, stating that the design is his own personal work, and that the drawings have been prepared under his own supervision.*

10. A design should be excluded from a competition—

(*a*) If sent in after the period named (accidents in transit excepted);

(*b*) If it does not substantially give the accommodation asked for;

(*c*) If it exceeds the limits of site as shown on the plan issued by the promoters, the figured dimensions on which should be adhered to until officially altered;

(*d*) If the assessor or assessors should determine that its probable cost will exceed the outlay stated in the instructions, or the estimate of the competitor should no outlay be stated; provided always that should the assessor or assessors not have been consulted in the first instance respecting the cost, as recommended in paragraph (*a*) of clause 2, and should he or they be of opinion that the oulay stated in the instructions is inadequate for the proper execution of the proposed works, the assessor or assessors shall not be bound in the selection of a design by the amount named in such instructions, but the question of cost shall nevertheless be a material element in the consideration of the award;

(*e*) If any of the other instructions are violated.

11. It is desirable that all designs submitted in a competition, except any excluded under clause 9, should, with the consent of their authors, be publicly exhibited after the award has been made, which award should be published at the time of exhibition.

12. The architect whose design may be selected as the best should be employed to carry out the work, and he should be paid in accordance with the schedule of "Professional practice as to the charges of architects" sanctioned and published by the Royal Institute. If no instructions are given to him to proceed within twelve months from the date of the selection, he should receive adequate compensation in addition to the premium (if any) awarded to him. In the event of a part only of his original design being carried out, he should be paid a sum to be agreed upon in respect of the deferred portion, such

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sum to be merged in the usual professional charge when the completion of the design is proceeded with.

*** *It should be understood that the Royal Institute issues these suggestions as a guide to promoters where a competition has been decided upon, but not as necessarily recommending the principle of competition.*

THE ARCHITECTURAL ASSOCIATION OF IRELAND.

"SOME Intentional Irregularities of Italian Mediæval Architecture" was the title of a lecture delivered before the Architectural Association of Ireland on the 18th ult. by Mr. Chas. J. MacCarthy, city architect of Dublin. The lecture dealt in detail with a number of curious and remarkable instances of structural irregularities in Italian mediæval churches. These irregularities were apparently first noted in modern times by Mr. Goodyear, an American architect, who attached so much importance to his enquiry that, assisted by a surveyor and a photographer, he entered on a regular course of enquiry, the results of which he duly published. These came under the notice of Mr. MacCarthy, who was so struck by the remarkable character of Mr. Goodyear's observations that he himself took the opportunity of enquiring personally into the matter by a couple of visits to Italy, with the result that he has become absolutely convinced of the correctness of Mr. Goodyear's conclusions—namely, that these so-called irregularities are absolutely the result of deliberate intention, and not due to constructive unskilfulness.

The irregularities to which Mr. MacCarthy called attention take such form as the narrowing of the nave toward the east—the inclination diagonally of the central axis of the church—in some instances to so great an extent as eight feet by actual measurement; and in other instances a perspective reduction of the lines of the nave arcade by a continuous narrowing of the spans of the several bays, and curious to note such reduction is seldom regular, but on the contrary extremely unsystematic to all appearance. For instance, we get three or four bays regularly diminishing in span, and then a wide bay—wider than any other, perhaps. This is often held to prove that the irregularities were not the result of deliberate forethought, but rather of accident. Mr. MacCarthy suggested that this was further proof of artistic feeling which disdained a purely mechanical reduction.

The lecture was illustrated by a large number of diagrams, and Mr. George Coffey, M.R.I.A., Curator of the Irish Exhibits of the Museum of Science and Art, showed a number of lantern views, not only of Italian mediæval work, but also of classical buildings of the Greek and Roman period, the similar studied irregularities of which went to afford a precedent and further proof of the correctness of Mr. MacCarthy's contention.

A hearty vote of thanks was proposed to Mr. MacCarthy and Mr. Coffey by Mr. T. E. Hudman, seconded by Mr. R. M. Butler.

RECONSTRUCTION OF THE GROSVENOR HOTEL.

THE Grosvenor Hotel, situated close to Victoria Station, has just been entirely reconstructed internally, under the direction of Mr. Alfred Waterhouse, R.A. In reconstructing the hotel the whole of the first and second floors have been completely altered. A glass-covered lounge has been fixed over the entrance. The grand hall forms the centre of the building. Its decorations are very light, the pilasters being of veined marble, and the panels of alabaster. Grey marble and alabaster have also been used for the balustrade in the lower part of the stairway. At the head of the first landing there is a painting of an Italian garden scene by Mr. Breakspear. The hall, which has a marble floor, is arranged as a lounge, and the galleries which run round it have been redecorated. The reading, reception, and billiard-rooms have been entirely refitted and decorated. The dining-room has been doubled in size, and will now accommodate more than 200 people at separate tables. The corridors are much more commodious than is usual, and are used as lounges. On the first floor a large reception-room has been made into private suites of rooms. The sanitary arrangements have been entirely remodelled. The hotel entrance to the Victoria Station of the London and Brighton Railway has been rearranged. In the station itself the company are carrying out very large extensions, a part of the scheme being an additional wing to the Grosvenor Hotel over the booking office, which will double the number of bedrooms and give the hotel another frontage. The hotel is now under the management of the Gordon Hotels Company, Limited.

A MODEL WORKHOUSE.

WHAT is claimed to be the best building of its kind in the United Kingdom is the newly-opened workhouse at Doncaster, designed by Mr. J. H. Morton, of South Shields. The new buildings, which are to accommodate 600 inmates, are situated at Balby, about two miles out of the town, and are divided into six groups. In the building at the entrance are the receiving and vagrant wards, with accommodation for storing the clothing taken from inmates who leave the receiving ward for a section in the workhouse. The main building stands some distance back, and comprises business offices, master's house, and a large dining hall which will also be used as a place of worship. From this administrative centre radiate the pavilions for the aged and able-bodied classes, with the necessary day rooms, officers' rooms, bath-rooms, etc. The infirmary is in a detached position, and, facing the south, ought to prove a cheerful building. The walls of the wards are of hard, impervious plaster, with glazed-brick dadoes of light colour, and projections or mouldings are dispensed with in favour of absolute cleanliness. On the opposite side of the estate are the lunacy buildings, providing accommodation for imbeciles, epileptics, and short-period lunatics; while the isolation hospital, well away from any other building, has its own nurses' accommodation, wash-house, and mortuary. Cottages for aged married couples are provided on the south side of the main building, and each will have a strip of garden. The block of buildings devoted to the electricity generating station and the laundry is an interesting feature of the scheme. Rising up from the centre is the clock tower, which also fulfils the useful purpose of taking the smoke from the boilers. A couple of dynamos and an accumulator room will supply electricity to all the buildings, and the laundry has been equipped with modern machinery. The cost of the new building has been about £100,000. The builders were Messrs. Harold Arnold & Son, of Doncaster.

THE COST OF LONDON IMPROVEMENTS.

THE Tramways and Street Widenings Bill of the London County Council, which would authorise the Council to construct new tramways, to reconstruct and alter tramways, to work tramways by electric traction, and to make new streets and street improvements, estimates the amount which the Council will require to expend on capital account for the purposes of the measures as follows:—For new streets and street improvements and works connected therewith, £1,188,000; for the construction of new tramways and reconstruction of existing tramways and other tramway works by this Bill to be authorised, and for purchase of land for a generating station, £957,000, or £2,145,000 in all. The length of the tramways proposed to be laid down is upwards of 28 miles, the longest sections being from Lower Richmond Road to the northern end of Battersea Bridge, and thence through Chelsea, Westminster, and along the Victoria Embankment to Blackfriars Bridge, and from Scrubb's Lane, Hammersmith, to Fulham High Street. The street improvements proposed are at, among other places, New King's Road, Fulham; King's Road, Chelsea; Blantyre Street, Cheyne Walk (including the construction of two new streets); Scrubb's Lane, Brook Green Road, Fulham Palace Road, High Street, Fulham; Richmond Road and Woodstock Road, Hammersmith; Red Lion Street, South Street, and Garrett Lane (Wandsworth and Tooting); Strath Terrace and Bolingbroke Grove, Battersea; Denmark Hill, Champion Park, Lordship Lane, London Road, Merton Road, Harleyford Street,

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and Camberwell New Road. In the case of quite a number of properties the Council propose to take a portion only for the improvement or widening of the roadways—forecourts, gardens, or private pavements, for example—and certain of the councils of the metropolitan boroughs are to be called upon to contribute towards the expense of some of the improvements. The lands proposed to be taken for the generating station comprise the premises of the St. Matthew's Girls' School abutting on Camberwell New Road. The estimate of gross expenditure under the General Powers Bill of the Council is £177,450, the proposals embodied in the measure including a widening of Central Street, St. Luke's, and of Brixton Road, near Kennington Park; the acquisition of land for sites for fire brigade purposes; further lands for the purposes of the Rotherhithe and Ratcliff Tunnels; and purchase of lands for an extension of Brockwell Park.

TRADE NOTES.

THE ventilation of St. Wilfrid's Priory, Hexham, has been carried out by means of Mackay's patent direct-acting invisible roof ventilators. supplied by Messrs. Cousland & Mackay, ventilating engineers, 150, Hope Street, Glasgow.

HAYWARD BROTHERS & ECKSTEIN, LIMITED, Union Works, Union Street, Borough, London, S.E., have just opened a branch office and show rooms at 63, Mosley Street, Manchester, for the convenience of their Lancashire, Cheshire and Midland customers. A member of their London staff will be in constant attendance at that address to answer enquiries and give estimates.

MESSRS. ROBEY & Co., LIMITED, engineers, Lincoln, at the close of the Paris Exhibition were awarded a Gold Medal for the excellent work done by the engine of 550 horse-power, exhibited by them for supplying electric light and power to the Exhibition. It is worthy of notice that only three English engineers undertook to supply electricity, and the above award is the result of the highly satisfactory manner in which the engine fulfilled all demands made on it. During the daily runs at the Exhibition there was no stoppage of the engine from any cause whatever. This is a distinction which, we understand, was shared by only one other engine of the many exhibited.

JOTTINGS.

A MOVEMENT is on foot to raise a memorial of the late Rev. J. C. Wharton, vicar of Gilling, near Richmond. It will probably take the form of a tablet or a stained-glass window in the village church.

THE Hull Corporation are going to make application to the Local Government Board for sanction to borrow the following sums:—For land Stepney Lane, £5,887 10s.; Hedon Road wood paving, etc., £17,000; Hull Tramways Order (construction of Hedon Road section), £120,000. The total is £142,887 10s.

THE death has occurred at Haven Bank, Boston, of Mr. James Lancaster, who was a great authority on drainage n Lincolnshire. He was appointed engineer and surveyor to the Black Sluice Drainage Commissioners in 858, which post he held until he resigned in 1894. He was also engineer and surveyor to the second district of the Witham Commissioners, which position he resigned about three years ago. Previous to 1857, he was engineer and surveyor to the South Holland Drainage Trust (Spalding).

THE Committee of the Leeds Hospital for Women and Children contemplate a complete revision of the plans of the proposed new hospital building, their object, of course, being to arrive at a thoroughly efficient and comprehensive scheme by embodying the most approved scientific ideas and furnishing such accommodation as will fully satisfy medical opinion. A site for the new structure is already at hand in the spacious grounds that front the present building—an area of nearly an acre and a half. It is not improbable that the old building will be retained as a temporary hospital for the children.

THE new Paddington fire station has been erected in Edgware Road, W., by the Works. Department of the Council, the manager of works having agreed to execute the work for the amount of the architect's estimate, viz., £13,210, with an addition of £98 for stoves. The entire cost of the site and building has, therefore, been £20,503 15s. 9d. The front (comprising two main blocks) to Edgware Road is built principally of red brick with Portland stone dressings. The building will accommodate a station officer, nine married men, and two coachmen, and contains stabling for four horses. The station is lighted by electricity.

THE erection of the Elder Memorial Church in Hope Street, Leith, has been completed. The new church is in the late Gothic style, and consists of a nave and aisles, the nave being divided into four bays with octagonal stone columns. At the north end there is a gallery, and at the south end a rectangular apse, which contains the pulpit and a communion table. Behind the apse there is a gallery for the choir and organ. The outside of the building is divided into four bays, corresponding with those in the interior, by deeply-projecting buttresses, and the walls are crowned with stone-battlemented parapets. The church has accommodation for 600 persons, and behind it there is a hall seated for 200 people, while in addition a vestry, session-house, and ladies' room have also been constructed. The architects were Messrs. Sidney Mitchell & Wilson, of Edinburgh.

AT the half-yearly general meeting of the Institute of Sanitary Engineers the following officers were elected for the year 1901:—President: Dr. J. B. Wilkinson, D.P.H., etc., M.O.H. County Borough of Oldham. Vice-Presidents: Dr. Thresh, M.O.H., Chelmsford; S. I. Adams, M.S.Inst., etc.; H. M. Dove, A.S.Inst., etc.; J. Farley, C.E.; S. Minty, A.S.Inst., etc.; W. J. Wells, M.S.A., A.S.Inst., etc. Hon. Directors: Messrs. H. M. Dove, J. Farley, and W. J. Wells. Council: Messrs. J. Allan, F. B. Barber, E. Berrington, C. E. Butcher, H. G. Beams, G. H. Carter, E. D. Cecil, W. H. Coltart, T. W. Deadman, C. Dobbs, J. T. Griffin, R. Horton, N. W. Hoskins, A. R. Hutson, J. Jenkins, W. E. Markham, F. W. Mason, T. R. Nash, E. R. Palmer, F. B. Patch, F. J. Rayner, W. Strachan, T. M. Taylor, J. Thompson. Auditor: R. J. Ward, C.A., 2, Clement's Inn, W.C.

INCREASED accommodation for the extension of Presbyterianism in West Hartlepool has just been provided in connection with the Park Road congregation. A church with a large hall, classrooms, and caretaker's house was designed by Messrs. Badenoch & Bruce, architects, of Newcastle-on-Tyne, and the foundation stone of the hall was laid on March 3rd this year. The hall and a front block of buildings have now been completed. The buildings are of brick, with stone dressings, the principal front being faced with red pressed Commondale bricks. The block facing Sandringham has entrance hall, staircase with lavatory accommodation, secretary's room, library, and a large infant classroom on ground floor; session room, ladies' room, lavatories, and access to hall gallery on the first floor. The stairs are fireproof, and have ample landing room. The hall is placed behind the front block. It is about 51 ft. long by 39 ft. wide, and 25 ft. high to ceiling, having a gallery at one end. Behind the hall a corridor leads to large kitchen for tea meetings, with heating chamber under. The general contractor is Mr. William Pearson, of West Hartlepool, the heating apparatus is by Messrs. Dinning & Cooke, the electric lighting by Messrs. Thomas G. Usher & Co., and the lead glazing by Messrs. Atkinson Bros., all of Newcastle-on-Tyne.

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The British Architect.

LONDON: FRIDAY, JANUARY 11, 1901.

THE AMENDED COMPETITION CONDITIONS.

THE proposed amendments to the R.I.B.A. "Suggestions for the Conduct of Architectural Competitions" were duly considered at the business meeting of the Institute on Monday evening last, and in the end, after being still further amended, were formally approved and adopted.

They do not, as we remarked last week, constitute much of a radical change. Clause 1 has been added to by the statement that "The President of the Royal Institute of British Architects is always prepared to act as honorary adviser to promoters in their appointment of assessors." The sub-divisions *a* and *b* of Clause 2, which deals with the duty of assessors, now read as follows, the new words being in italics:—(*a*) To draw up the particulars and conditions (*as far as possible in accordance with the principles set forth in these "Suggestions"*) as instruction to competitors, and to advise upon the question of cost. (*b*) To determine *whether* (instead of "which of") the designs conform to the instructions, and to exclude *any which do not* (instead of "all others.") Then in Clause 3, referring to the absolute necessity for the abstention of promoters or assessor from competing themselves, this restriction has been extended to "any employé of either."

The foregoing amendments may be taken rather in the way of strengthening the various clauses to which they refer than as materially changing the letter or spirit of the clauses. The intimation that the President is prepared to advise promoters as to the appointment of an assessor is merely putting into black and white a practice that has become fairly well recognised and established. For the most part we think architects accept the practice without demur, though we have heard some strong complaints against it. We do not see why it should not work out right, and with advantage to the general interests of the profession, provided the President is a competent architect and an honourable man. There have been assessors appointed, we know, in this way who have not given satisfaction, but probably if another method of selecting an assessor had been adopted the result might have been little, if any, better. Our opinion has always been that the difficulties of arriving at a satisfactory conclusion in a competition are usually far deeper seated than in the professional adjudication of it. The initial and succeeding stages too often lay a foundation of trouble and difficulty which no amount of intelligent professional judgment can overcome. The only successful procedure to a right conclusion is in the appointment at the very outset of a competition of a thoroughly competent architect who shall advise the promoters in the drawing up of the conditions, and in the general conductof the competition, as well as adjudicate upon the designs after they have been received. The bringing in of the professional assessor at the eleventh hour can do but little towards remedying or nullifying initial blundering.

The introduction of a new clause making it obligatory upon every competitor to sign a declaration to the effect that the design submitted by him is his own work, and that the drawings have been prepared under his own supervision, must be regarded as satisfactory. Whether it will really have the desired effect of laying the architectural "ghost" remains to be seen, but it should tend in that direction. Of course only an affidavit would legally enable a man to swear to his own hurt!

Clause 4 has had an important addition made to it in the form of a suggestion that "Perspective drawings are not necessary, but if the assessor advises that they are desirable, it should be so stated." Clearly this is a real sign of progress. For though architects may be unable to draw out their designs in accurate and truthful perspective they are now so far advanced as to be able to realise it all with their mental vision. To be able to carry in one's eye, without such adventitious aid as a perspective view, the actual effect of a design when completed, is a mental accomplishment which cannot but be regarded as a distinct step in advance in architectural education. As to the lay committees, if there is any difficulty in that direction, the assessor will be able to explain it all satisfactorily from the elevational drawings. Years ago it was considered necessary to impress the lay mind with the transcendant importance and dignity of architecture by highly coloured and imaginative views of impossible buildings. But we have grown ever so much wiser since then, and the public have become so conversant with architecture and art, through the medium of night classes at technical and art schools, as to be capable—presumably—of discovering for themselves, from elevational drawings only, what a building will be like when it is finished. This is really only a mark of twentieth century advancement, and it is an excellent idea to begin the new century with an official pronouncement against the folly and uselessness of perspective in the representation of architectural design on paper.

And now that these R.I.B.A. model conditions have been again revised and amended we are still faced with the old difficulty as to how best promoters of competitions may be influenced to accept and adopt even the main provisions they contain. As a rule they agree to some clauses and not to others, and one rarely finds—except where the conditions have been drawn up by an assessor like Mr. Waterhouse—that all the principles vital to the promotion of a fair competition are adopted. It would certainly be an enlightened committee indeed who accepted Clause 12 in its entirety. We do not remember at the moment any single competition in which the promoters agreed that in the event of the work not being proceeded with within 12 months after the design was selected, the author of it should receive adequate compensation, in addition to the premium awarded to him. Or that, in the event of a part only of his original design being carried out, the architect should be paid a sum to be agreed upon in respect of the deferred portion, such sum to be merged in the usual professional charge when the completion of the design was proceeded with? Is not the question of the fees to be paid the successful competitor upon his appointment as architect often left a very open one? And is the author of the first premiated design always, or even generally, employed to carry out the work? In regard to these and other vital matters, we fear that promoters of competitions have still a good distance to go ere any real reform is effected. Indeed, at present it is quite the exception, rather than the rule, to find a competition in which the conditions are substantially based upon the R.I.B.A. "Suggestions." The Glasgow Royal Infirmary competition, and also the Strand frontages competition are amongst the latest and most prominent illustrations of a complete evasion of the fundamental principles of architectural competitions as set out in the R.I.B.A. "Suggestions." And until architects will individually and collectively determine that they will stand or fall by these principles, just so long will these competition abuses prevail. This is the chief and final remedy.

GLASGOW ROYAL INFIRMARY COMPETITION.

THE following is the report of Dr. Rowand Anderson, R.S.A., upon the 10 designs submitted in this competition, the result of which has already been announced in these columns. It is addressed to the Subscribers' Committee:—

"16, Rutland Square,
"Edinburgh, November 9th, 1900.

"Gentlemen,—In this competition 10 architects have sent in plans; two of them have sent in alternative designs, making 12 sets—in all, 1,638 drawings. I have gone over in detail each individual plan, and compared the accommodation given with the specification of requirements, and, generally speaking, all that has been asked for has been given, but, of course, in different ways. As the committee have instructed competitors that a pathological institute need not necessarily be included in the plans, my observations will be limited to the infirmary proper and the isolation wards. Each design is illustrated by the floor plans of the different buildings and elevations of the

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façades, all drawn to a uniform scale, as stipulated for in clause 8 of the terms and conditions of competition. Separate drawings, in accordance with clause 9, showing the method of heating and ventilating, have been submitted by all the competitors except the author of design marked H. Each competitor has submitted a descriptive memorandum and estimate of the probable cost. The competitors have, with the exception of B and D, complied with clause 18, asking that the façade of the south block should be, by the character of its architecture, commemorative of the Diamond Jubilee of Her Majesty the Queen. B and D have no south block, but a large court. In design B the whole court is treated in an important architectural manner. In design D there is no distinctive part of the court treated in an important architectural manner, but there is shown in the centre of the court a statue of Her Majesty. The plans submitted by the committee have been more or less followed by some of the competitors, while others have entirely departed from them. Designs E and F may be taken as examples of closely following the committee's plans, while designs B and D are an entire departure from them. After a careful and exhaustive study of each design, I placed on a short leet designs A, F, H, and J. In bringing to a focus my opinion of the relative merits of these designs I have kept specially in view:—

"1st. Careful planning, with adaptation to site, and to the amount of sunlight the buildings would receive.

"2nd. The manner in which the plans lend themselves to the reconstruction of the new infirmary.

"3rd. The architectural treatment of the building, and especially of the south front, as a commemorative memorial of the Queen's Diamond Jubilee.

"I conclude to place F first, H second, J third, and A fourth.

"I am, yours faithfully,
"R. ROWAND ANDERSON."

The following are the authors of the eight designs, together with the approximate cost of carrying out the respective designs, as estimated by Mr. Robert Whitson, the committee's measurer:—

(A) Sydney Mitchell & Wilson, Edinburgh,	£303,000
(B) Hippolyte J. Blanc, Edinburgh	269,000
(C) Malcolm Stark & Rowntree, London ...	252,000
(D) John James Burnet, Glasgow	219,000
(E) James Miller, Glasgow	241,000
(F) H. E. Clifford, Glasgow	238,000
(G) H. Percy Adams, London	245,000
(H) A. Hessel Tiltman, London	321,000
(I) Campbell Douglas & Morrison, Glasgow	225,000
(J) T. L. Watson & H. Mitchell, Glasgow...	235,000

The design marked (E) was adopted by the committee as first in order of merit, by 11 votes to 10 given for those marked (F), although not included in the short leet selected by the assessor for a final choice. Mr. Miller is to be paid 4 per cent. on the £241,000. Each of the unsuccessful competitors receives £100.

NOTES ON CURRENT EVENTS.

THE Glasgow Royal Infirmary competition cannot be said to have terminated satisfactorily in one way. For although the selected design may be the best for aught we know to the contrary, yet Dr. Rowand Anderson, the assessor, in his report, distinctly states that "after a careful and exhaustive study of each design," he selected designs A, F, H, and J from which to make a final choice. The design adopted is not amongst those so chosen, but was brought in by the committee, and adopted in the face of Dr. Anderson's report. So that the designs placed first, second, third, and fourth in order of merit by the assessor are entirely passed over by the committee. And yet we are informed by that ubiquitous individual—"the man in the street"—that the committee's plans, which the competitors were supposed to follow, were considered by medical experts to be more or less medically impossible. Such a result cannot, as we have already said, be considered satisfactory, especially when an architect of Dr. Anderson's reputation and experience is acting as assessor. So far as we have seen, no explanation of the committee's action in thus going behind the assessor's report has been forthcoming.

WE print elsewhere the conditions of competitions approved last month by the American Institute of Architects. The comparison between them and those just approved by the Royal Institute of British Architects is interesting.

THE resolution referring to the present status of the architectural profession, to which we referred last week, duly came up for consideration at the R.I.B.A. meeting on Monday evening. But it was amended as follows before being passed: "Resolved that a committee be appointed to inquire into the status of the architectural profession, and to suggest remedies if needed." This is sufficiently vague in all conscience.

THE following have been elected Fellows of the Royal Institute of British Architects this week: Walter Aston, Manchester; Frederick Oscar Oertel, executive engineer Indian Public Works Department: and Thomas Bostock Whinney, 8, Old Jewry, E.C. Mr. F. M. Harvey, Great Yarmouth, was elected an Associate.

AT a meeting of the academicians of the Royal Scottish Academy held last Friday, it was decided that the Academician to be elected next month to fill the vacancy caused by the death of Mr. Lockhart should be drawn from the ranks of the Sculptor-Associates. The only Sculptor-Associates at present are Mr. Pittendrigh Macgillivray and Mr. W. Birnie Rhind.

MR. GEORGE SMITH, who was at one time a well-known exhibitor at the Royal Academy, died last week in his 72nd year. When a very young man, having shown much promise as a student in the Academy schools, he attracted the notice of the late C. M. Cope, R.A., and was engaged by him as an assistant in executing some of the frescoes for the House of Lords; but he soon passed from "historical" to "domestic" art, and quickly became known for his pictures, mostly of cabinet size, more or less in the manner of Wilkie and Webster. Mr. Smith gave up the continuous practice of his art a good many years ago, and latterly was chiefly known as a connoisseur of old pictures, of which he formed a good collection, which was sold some time back at Christie's.

A £10 PREMIUM is offered for the best design for six villas, with bathroom and modern conveniences, to let at from 7s. 6d. to 8s. per week, and for six cottages to let at from 5s. 6d. to 6s. per week. The successful competitor is also to be commissioned to prepare designs for 50 other houses. If the fee is to be on the same scale as the premium for the first lot the job cannot be a very remunerative one. Mr. G. W. Waring, 42, Wellington Road, Dudley, will furnish particulars to those desiring to compete.

IT has been decided to erect a monument to Wagner in Berlin, and all the sculptors of Germany have been invited to send in designs for the monument. The committee has promised to divide £1,000 among the authors of ten designs from which a final choice will be made. The monument is to be of marble, and the cost is not to exceed £5,000. The Kaiser has desired that the Wagner monument shall correspond with those already erected to Goethe and Schiller in the Thiergarten.

THE Liverpool Architectural Society met for the first time this year on Monday evening. Professor Simpson, of University College, the president, in opening the proceedings, remarked that they united in wishing the society a prosperous new century. They formed the oldest architectural society in the provinces, and claimed also to be the strongest. Their warmest congratulations were extended to Mr. Pearce Edwards upon his appointment to the position of city architect at Bradford. The work Mr. Edwards had done for the society was of the utmost value. Mr. Woolfall seconded a vote of congratulation, proposed by the chairman, and it was recorded on the minutes. A paper by Mr. M. H. Baillie Scott, of Douglas, on "The planning of small country houses," who was not able to be present, was read by the Chairman.

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THE Society for the Protection of Ancient Buildings protests against the proposed "restoration" of Haddington Abbey ("The Lamp of Lothian"). Mr. Thackeray Turner, writing on behalf of the Society, remarks that "the building is such a priceless and unspoilt work of art, that its loss by 'restoration' cannot be borne with an even mind." If the leading inhabitants of the neighbourhood are against the proposal, as Mr. Turner says is the case, then it should not be a very difficult matter to get the Board of Works to put its veto upon the scheme.

THE excavations now being pursued in the Forum at Rome have yielded nothing more interesting than the discovery of an ancient Christian church decorated with paintings of the eighth century. Mr. Rushforth, the Director of the newly-founded British School at Rome, who reports this new find in a letter to the *Times*, states that the church dated from the second century, though remodelled in Christian times; it was known as "Old St. Mary's" in the seventh century, and is one of the earliest Christian churches of which any remains exist. This newly-discovered church is decorated with dated frescoes of the eighth century, some of which are "as fresh as on the day that they were painted." Among them are "a Crucifixion of extraordinary brilliancy," scenes from the Old and New Testaments, and portraits of the two Popes, Zacharias and Paul I., who were reigning when the old church was being redecorated. Unfortunately the long-buried paintings are likely to fade under the influence of air and light. Mr. Rushforth advises all who are interested in the find to make haste if they wish to see at their best the remaining decorations of "that which, without exaggeration, may be described as the Sistine Chapel of the eighth century."

IN connection with the widening of the Strand the respective areas of the churchyards attached to S. Clement Danes, and S. Mary-le-Strand churches are to be reduced. The churchyard of the first-named church has already been boarded round, ready for the operation of removing the bodies interred therein. These are to be re-interred in Brookwood Cemetery. Memorial tablets are to be erected in the two churches and also in the cemetery. Once the bodies are removed from S. Clement's churchyard, large portions of the churchyard will be immediately thrown into the roadway, so that eventually a width of 60 ft. will be secured. The new roadway will be made available for traffic, like that in connection with the Holywell Street block, without waiting for the completion of any other portion of the Strand widening scheme, as the County Council intends to give the public the immediate benefit of every step it takes in carrying out this great street improvement scheme.

THE eighteenth annual report of the Metropolitan Public Gardens Association states that the income for the past year, amounting to £4,400, was considerably less than that received in 1899, owing mainly to the effects of the war in diverting and diminishing the flow of contributions. The expenditure was £4,200, to which should be added a further considerable sum for liabilities in connection with work in course of being carried out. Four new grounds have been laid out and opened, and assistance has been rendered to a number of other schemes for the acquisition or preservation of open spaces, the planting of trees, and the placing of seats in thoroughfares or other public sites. An appeal is made for increased support during the year 1901, and for the assistance of a larger number both of members and donors, so that the work of the association might not be curtailed.

PROFESSOR A. B. W. KENNEDY, of London, is the new electrical adviser to the Manchester Corporation. The payment of £15,000 is to be made for his services.

THE Council of the Society of Arts have arranged for a course of special lectures on "Polyphase Electrical Engineering" to be given by Mr. Alfred C. Eborall on the following dates:—April 26th, May 3rd, 10th, 17th. The subject is one of very great interest in connection with the development of electric railways and other applications of electric power; and the Council believe that those interested will be glad to have placed at their disposal the latest information on the subject by one who has made a special study of it, and is recognised as an authority. A limited number of tickets will be given to genuine students of the subjects in addition to the usual friend's ticket to each member of the society. For these application should be made to the secretary.

ELECTRICAL engineering must be regarded as one of the lucrative professions—provided, of course, those who engage in it are really clever and know their business. A two hours' discussion took place at last week's meeting of the Blackburn Town Council respecting the proposal to increase the salary of Mr. Giles, the electrical engineer (an applicant for the position at Salford), from £500 to £700 per year, conditional upon his remaining four years, with a further £150 per year in respect of the electricity and tramways extension. Mr. Alderman Thompson said the Corporation were half-way through a large undertaking, involving an outlay of £400,000, and it would be exceedingly unwise policy to part with their engineer for the sake of a few hundreds a year. The proposal was strongly opposed by a section of the Council, but eventually on a division the recommendation was carried by 22 votes to 13.

AFTER communication with, and on the invitation of, the Central London Railway Company, and a committee representing the owners of houses in the vicinity thereof, the Board of Trade have appointed a committee consisting of Lord Rayleigh, F.R.S., chairman; Sir John Wolfe-Barry, K.C.B., F.R.S., and Professor Ewing, F.R.S., to consider to what extent the working of the traffic on the Central London Railway produces vibration in the adjacent buildings, and what alterations in the conditions of such working or in structure can be devised to remedy the same, and to report to the Board of Trade.

SIR JOHN AIRD, M.P., left England for Egypt last week end in connection with the great undertaking upon which his firm, Messrs. J. Aird & Co., are engaged in that country. He stated, in the course of a conversation with a correspondent, that the work of constructing the two dams at Assuan and Assiut was proceeding satisfactorily, and it was hoped that within two years it would be completed. When the two dams were finally completed the effect would be that the level of the water in the Nile would be raised for a distance of 180 miles, and while navigation of the river would be made much easier, the general power of the country to carry out irrigation work would be considerably increased. Further work in the same direction, however, would necessarily have to follow sooner or later.

COLONEL YORKE'S report on the lift accident that occurred at London Bridge Station, on the City and South London Railway, on June 28th, has been issued. As the lift, then containing three passengers and the attendant, was being lowered to the platform, the overhead pulley shaft broke, and the cage fell on to the buffers at the bottom. The impact dislodged some balancing weights on the top, which, falling through the roof, broke the legs of two men in the cage, and fractured the jaw of another. The safety gear was at the time out of use for certain repairs to be effected, and the general manager was not aware that the lift was being used for the conveyance of passengers. And though the pulley shaft was made of the best mild steel, Colonel Yorke considers that the factor of safety was hardly sufficient for the work required of it, and he thinks steps should be taken to guard the possible defects in the safety gear.

THE tallest chimney in America is being erected at Constable Hook, Bayonne, N.J. The stack is being put up by the Oxford Copper Company, whose plant adjoins that of the Standard Oil Company, to carry off the smoke and gases from its furnaces, which have been the chief source of complaint. The stack itself has a base of 30 ft. square for an equal height. Above this point the chimney is round. It is to be built up to a total height of 360 ft. The diameter at the top will be 10 ft. The weight of the stack is to be 20,000 tons, and the cost of erecting it will be in the neighbourhood of £10,000.

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FROM a statistical statement published last week it appears that in the year ending March last 147,155½ million cubic feet of gas were manufactured in the United Kingdom. There are 3½ million consumers receiving supplies, and half a million public lamps were lighted. To give a better idea of the magnitude of the gas undertakings, it may be said that over 99 million pounds of paid-up capital and loans have been sunk in them, and one year's receipts total 23½ millions sterling. The quantity of coal carbonised in 12 months is 13½ million tons, and there are nearly 27,000 miles of gas mains. Local authorities themselves own 232 undertakings, and private companies work 450, giving 682 together.

OUR ILLUSTRATIONS.

RAMBLING SKETCHES, NO. 1,310.

BY T. RAFFLES DAVISON.

THESE four items of old work are such as one constantly meets with in a day's country ramble. Ashurst Church is a very picturesque object with its quaint turret, in which it will be noted the louvred openings come to the right-hand side of each face of the turret. There is also a quaint weather vane. The great contrast between the uninteresting cast-iron patterns of modern tombstones and the old ones is never more apparent than in the great variety of those dating from the period of our illustration. Not only does the carving tell of an angelic issue from Father Time's emptied skulls, but it does it in a charmingly dainty decorative manner. If at first sight you have to argue with your friend that the angel is not a pony, you are left in no doubt as to the skulls and Father Time! And, even further, there is the suggested division of the world into two groups, those who, with the right-hand skull, still fix their gaze on the things of Time, whilst the others, typified by the left-hand one, direct their thoughts after the soaring angel. Did my readers ever get so much clear teaching from a modern tombstone?

The inn sign crossing the roadway at Edenbridge is a picturesque relic, such as must yield to the regulations of modern councils; but one rather regrets it. A curious point about this is that instead of the Crown Inn it most clearly should be the sign of the Bell Inn.

Sundials are a most interesting subject, and the variety and manner of them cannot be appreciated till one studies a work like that just re-issued by Messrs. Bell & Sons. But notwithstanding all the quaint designs of them one may be well satisfied with a simple monitor like that I noted at Ashurst, which, after all, has the negative merit of not looking like a baluster filched from an old city church!

T. RAFFLES DAVISON.

ROYAL ACADEMY ARCHITECTURAL SCHOOL. STREET FRONT DESIGN.

BY A. E. CORBETT.

WE illustrate the best of the designs submitted for this subject, a design which in its main essentials is very satisfactory, and as a matter of fact we very seldom find anything nearly so good in executed work. The general setting out of the design, as well as most of its details, show a result much above the average of students' work, and it appears to us regrettable that this ability was not officially recognised.

A PAIR OF SEMI-DETACHED HOUSES.

R. HEYWOOD HASLAM, ARCHITECT.

THIS is a type of house between the cottage and the villa which is much called for, and very seldom supplied in any artistic form. Mr. Haslam's design makes a very pleasing little group.

CHANCEL GATES, ST. DAVID'S CHURCH, EXETER.

W. D. CARÖE, M.A., ARCHITECT.

WE give an interesting piece of ironwork detail from this fine church, illustrated in our Christmas number. The marble piers at either side of the gates are crowned by angels, which were not *in situ* when our sketches were made.

A MODERN VIEW OF LONDON CHURCH ARCHITECTURE.—IV.

BY T. FRANCIS BUMPUS.

(Continued from December 28th.)

OF the large number of City Churches rebuilt by Wren after the Great Fire, embellished as the majority of them are with altarpieces, pulpits, organ-cases, and chandeliers of the most grandiose description, there are but two that can show any contemporaneous specimens of vitreous decoration*—St. Edmund the King, Lombard Street, whose west (really south) window set up in the Memorable Year of Union, is a fine specimen of heraldic glass work, and St. Andrew's, Holborn, where the great east window,† a work of Joshua Price.

Joshua Price, one of a family of glass painters who appear to have been the last possessing the old secret of manufacturing the pure ruby glass, which after their time until its re-discovery half a century ago in France, was a familiar instance of "lost art," approaches much more closely to the old principles of stained-glass manufacture than that executed at a later period of the Georgian era under Peckitt, Pearson, Jarvis, Eginton, and Backler, though in certain instances the colours produced by these men are fine. As, for instance, in some of Peckitt's, which may be seen in the south transept windows of York Minster, in New College Chapel, Oxford, and in the west window of Exeter Cathedral.

Pearson executed the east windows of St. Botolph, Aldersgate, St. Giles', Cripplegate, and that, after a picture of Moses and the Brazen Serpent, by Mortimer, at the east-end of the choir of Salisbury Cathedral, being assisted in some of those works by his wife, Margaret Eglinton.

To Jarvis is due, from the designs of Sir Joshua Reynolds, the west window of New College, Oxford, representing the Nativity‡ and the Cardinal Virtues.

Much of Eginton's work has disappeared, but specimens still remain in the west window of the ante-chapel at Magdalen College, Oxford, and at St. Alkmund's, Shrewsbury. The east window of St. Dunstan-in-the-East, by Backler, was thought very highly of at the period of its execution 75 years ago. To these may be added the name of Nixon, subsequently of the firm of Ward & Nixon, now Ward & Hughes, who, about 1839, painted the figures of St. Peter and St. Paul in the side windows at the west end of St. Edmund's, Lombard Street; and Holder, some

* St. Paul's Cathedral remained destitute of stained glass until the presentation in 1865 by Thos. Brown, Esq. (of the publishing house of Longmans & Co.), of the great west window, and about the same time of those at the west end of the nave aisles.

† This window, and the general decoration of the sanctuary at St. Andrew's, Holborn, were due to Dr. Sacheverel, whose remains lie buried beneath the pavement. The Holy Dove, in a small circular window in the roof, testifies to the piety of these times.

‡ In this "Nativity" at New College Chapel, Oxford, the cartoon for which was in all probability that made by Reynolds for the mural decoration of St. Paul's, the likenesses of Sir Joshua and Jarvis, as Shepherds worshipping, were introduced. It will be remembered that towards the end of 1773 a proposition originated with the Royal Academy for decorating the interior of St. Paul's with paintings. Many members volunteered their services, and application having been made to the Dean and Chapter, the offer was gladly accepted. The Dean of St. Paul's at that time was Dr. Newton, Bishop of Bristol. He was a great lover of pictures, and warmly advocated the scheme, as did also George III., but the trustees of the cathedral, Cornwallis, Archbishop of Canterbury, and Terrick, Bishop of London, were opposed to it—the latter violently so, for on the Dean waiting upon him and telling him, with much exultation, of the progress that had been made, vetoed the whole project. "My good Lord Bishop of Bristol," he said, "I have been already distantly and imperfectly informed of such an affair having been in contemplation; but as the sole power remains with myself, I therefore inform your lordship that whilst I live and have the power I will never suffer the doors of the Metropolitan Cathedral to be opened for the introduction of Popery into it." St. Paul's suffered no loss. "I confess," said Dean Milman, "I shudder at the idea of our walls being covered with the audacious designs and tawdry colouring of West, Barry, Cipriani Dance, and Angelica Kauffman"—these being the five who, with Sir Joshua Reynolds, were selected to carry out the scheme.

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of whose work may still be seen in the window above the altar at West Hackney Parish Church, the centre one of the three square-headed compartments being occupied by a copy of Ribalta's Christ bearing His Cross.

Collins, a glass painter in the Strand, executed the glass still standing in the three round-headed windows at the east end of St. Peter's, Walworth, the two side ones of which were the gift of the architect of that church, Sir John Soane, on the occasion of this being the first church erected by him in the long course of his professional career.

Evans of Shrewsbury was in some respects considerably in advance of the practitioners in the vitreous art alluded to. For the period of their execution (c. 1825) his windows on the north and south sides of Winchester College Chapel are admirable, though the removal of the building's coeval stained glass was deeply to be deplored.* Evans was also associated at a somewhat earlier period with Sir John Betton in the glass which until recently filled the great transeptal windows of Lichfield Cathedral. The easternmost window on either side the nave of Winchester Cathedral is likewise due to him, also that forming a memorial to Bishop Sparke in Bishop West's Chapel at Ely. The east window of old Hornsey Church is another of Evans' productions, as is that at the west end of the northernmost aisle of St. Helen's, Abingdon.

Although the majority of these windows passed at the time of their execution for very satisfactory specimens of the vitreous art, they exhibit no knowledge whatever of the principles which guided the old glass painters, while for their insertion the framework of Mediæval architects was frequently removed. Thus to make way for the window, painted by Jarvis, from a design by Sir Benjamin West at St. George's Chapel, Windsor, the original tracery and sub-divisions of a noble Late Perpendicular window of fifteen lights were remorselessly cut away. Happily, about the year 1862, this hideous piece of work was removed, the mullions and tracery reinstated, and the whole filled with stained glass by Clayton & Bell, under the direction of Sir G. G. Scott, as a memorial to the Prince Consort. The tracery at All Souls' College, Oxford, fortunately escaped when Eginton put painted glass into the west window at the close of the last century. This has, however, been all removed and the lights filled with stained glass by Hardman, representing the Doom.

At Magdalene College Chapel the mullions and tracery were ruthlessly cut out to accommodate glass of Eginton's stretching over the whole window, without borderings or geometrical forms. Divided into a number of squares by an iron frame, by which means an air of being seen through a portcullis is imparted to them, the painted windows of this period were made out entirely by enamel colour, brown shade and yellow stain on a white base, with little or no outline, and few leads. The drawing and tinting of the draperies and complexions is generally soft, dreamy, and pulpy, the composition, colour, and effect being often marked by the feeble elegance so common in pictures of the Reynolds school. Such works were, in fact, so many pictorial transparencies, setting at defiance all the rules of art and every principle of construction in glass-staining.

Absurdly feeble, and, in some cases, mischievous as these attempts at vitreous decoration were, we cannot help feeling grateful to their authors for keeping alive an art whose true principles, along with those of architecture, were revived with varying success 60 years ago by Willement, Wailes of Newcastle, Hardman of Birmingham, Michael and Arthur O'Connor, Gibbs, Warrington and Ward and Nixon.* Even these men had to contend with difficulties, and although we can nowadays afford to smile at some of their productions, it must be remembered they bore the burden and heat of the day in bringing about that revivification of the last 30 years under such well-known names as Clayton and Bell, Heaton and Butler, Lavers and Westlake, Burlisson and Grylls, Morris and Marshall, Kempe, Comper and Frampton.

The vulgarising element which did all the mischief is now, it is to be sincerely hoped, a thing of the past, and popular taste having conceived a loathing for the Capronnier, Munich, and other naturalistic "schools," evinces a real and extensive settlement in the direction of good solid English work brought about by diligent study of ancient models.

(*To be continued.*)

* The splendid Jesse window at the east end of Winchester College Chapel was skilfully repaired by Evans about the same period. In its original state it formed the subject of a poem by Bishop Lowth, who successively filled the sees of S. David's, Oxford, and London between 1766 and 1787.

The following is an extract from the long poem written on this window by the Bishop when a Winchester scholar. It was published in Pearch's *Collection of Poems* (4 vols, 1775).

"Supine on earth an awful figure lies,
While softest slumbers seem to seal his eyes;
The hoary sire Heaven's guardian care demands,
And at his feet the watchful angel stands.
The form august and large, the mien divine
Betray the founder of Mesiah's line.
Lo! from His loins the promised stem ascends,
And high to Heaven its sacred boughs extends:
Each limb productive of some hero springs,
And blooms luxuriant with a race of kings.
Th' eternal plant wide spreads its arms around,
And with the mighty Branch the mystic top is crowned."

* Willement, some of whose work, notably the stained glass above the altar in St. Dunstan's, Fleet Street, with figures of the Evangelists, and the heraldic work in the east window of St. Paul's Church, Ball's Pond, and very good, by the way, dates quite from the darkest period of the art, of which the specimens quoted may be termed "transitional." Contemporary with his work at the Temple Church (1841-2) is some equally meritorious by Willement in the apse of Christ Church, Westminster, then just erected from the designs of Poynter, and about the same time he was commissioned to fix and, where necessary, supplement the fine stained glass representing the Radix Jesse, which had been acquired from a suppressed religious house at Mechlin for St. George's, Hanover Square. Two windows by Wailes, executed early in the forties—one for the east end of St. Peter's, Saffron Hill; and the other for St. James the Great, Bethnal Green—are mentioned in Markland's "Expediency of Rendering Sepulchral Memorials Subservient to Pious and Christian Uses" as among the first to be placed in churches as memorials to departed relatives. Both, considering the period of their execution, are very creditable; and there is some (also by Wailes) in the nave of St Mark's College Chapel, Chelsea, executed about the same time, and of great excellence. Under the superintendence of Pugin, O'Connor carried out the great west and transeptal windows of St. Saviour's, Leeds, the oversight of that master causing the importation into them of the true Mediæval spirit; while certain of the tinctures are, for the time (1843-45), truly superb. To Pugin is likewise due much of the excellence of Hardman's earlier works—as, for instance, in St. Edmund's College Chapel at Ware, St. Cuthbert's College Chapel at Ushaw, near Durham, and in a church at Coton Hall, in Staffordshire. Ward & Nixon's glass, in the Mosaic style, executed in 1843 for Scott & Moffatt's fine cruciform church of St. Giles, Camberwell, caught the tone of old work in a marvellous degree. The *ensemble* of the window is, however, hardly pleasing, the side lights having been filled at different times, as funds permitted, thus causing a discrepancy in the tinctures, which, in the side lights, should balance,

HINTS ON THE PREPARATION OF STUDENTSHIP DRAWINGS.

MR. R. WEIR SCHULTZ read the following paper at a meeting of the Architectural Association on Friday evening last.

Most of our studentships of the present time are rightly or wrongly awarded on a system by which, under certain conditions, drawings are submitted in competition for the various awards. It is a matter of grave question whether this is the best method of choosing the student who is most worthy to participate in the benefits to be derived from the opportunities for study opening up by the bestowal of the prize. I fancy, however, that it would be going outside the limits of our subject were we to discuss this point; we must, therefore, accept it for the moment as a fact, and try to consider how far the conditions can be acted up to with most benefit to the student, and with the prospect of obtaining the best results. During the past 30 years or so architectural students have been encouraged to worship at the shrine of the fetish of mere draughtsmanship, and they have got into the way of dividing themselves into two camps (1) that of the draughtsman *par excellence*, and (2) that of the so-called practical man. The former have been accustomed to go about with their heads rather high in the air, and a general tone of superiority in their bearing, and to be obtrusively patronising to the latter, who have been looked upon as mere "hewers of wood and drawers of water." It was considered a much greater merit to be able to make a pretty perspective than to be capable of working out an honest, straightforward piece of construction; and this is hardly to be wondered at, when we find that the bulk of

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the plums were usually awarded, consciously or otherwise, to the most taking sets of drawings, looked upon as drawings. Many things were responsible for this, and amongst them I think we may place the following:—1. In the case of the Royal Academy, the fact that the architectural prizes were judged by a committee or council in which painters largely bulked, the majority of whom had little or no knowledge of architecture. We can all remember instances where thorough and careful studies were obviously passed over in favour of others which had been made purposely attractive to the body of selection, often at the expense of ignoring or depressing the essential points of the subject set for study when judged from an architectural standpoint; and, indeed, students got to expect this, and, consequently, drawings were prepared purposely with a certain superficial attraction. I well remember a hue and cry which was raised by students a few years ago when, by a strange chance, a really strong and original, if somewhat unprepossessing design, showing real genius in composition and construction, was given the first place over others better drawn, perhaps, and worked out on more more correct archæological lines, but which did not show anything like the same sturdy grasp and probably strong handling of the subject. 2. I think I may also say that Mr. Norman Shaw's beautiful drawings had a potent influence on the younger generation, who seemed to lose sight of his power of composition and daring of construction in the charm of his draughtsmanship. 3. The attraction of the walls of the architectural room at the Academy also carried weight. Men knew that a pretty drawing was more likely to be placed than a clear straightforward architectural diagram. 4. The growth of architectural competition generally likewise created a certain demand for showy drawings, and men knew that they could command a higher price for their services if they cultivated the knack of mere draughtsmanship, and so were apt to ignore the more essential qualities which go to make a good architect.

I tried to ascertain from your hon. secretary the motive which influenced your committee in selecting the subject for our evening's entertainment, but the answer I received left me more in the dark than before. I assume, however, that we are expected to give you some hints that will be useful to you. There are at least two ways in which such hints can be of service to you; but they may lead in diametrically opposite directions. The first is, hints that will enable you to go in for a studentship with a chance of winning it; the second, hints that may help you to prepare your work in such a manner that you will reap the greatest benefit to yourself from the study of the subject which has been set before you. On the first I cannot venture to help you, and will leave this to my friend Mr. Pite, who, in his day, was fortunate in obtaining some of the most sought-after prizes, and who is now, I believe, a member of one of those mysterious bodies or councils who carry your fate in their hands. On the second I can, perhaps, give you some advice which may be of use to you, if only in the way of starting what I hope will be an instructive discussion afterwards. I assume that studentships are looked upon as purely educational, that is to say affording the young architect an opportunity which would not otherwise be open to him for perfecting himself in the study of his art.

To enable him to obtain one of these studentships certain conditions are laid down, some of which, I am sorry to say, have a considerable savour of red tape about them, and tend to hamper the student rather than to encourage him. I refer more particularly to the conditions regarding size and number of sheets, scale of drawings, etc., which are in many cases needlessly arbitrary. Broadly speaking, the type of subject is of two kinds. The student may have to prepare a design for a building or a portion of a building, or he may have to submit a series of drawings, showing evidences of study of old buildings or their accessories.

The first we may look upon as an essay in design and composition, and it will shortly bear on its face the impress of the training through which its author has passed, or show evidences of the course of thought which has influenced him, but whether it will show a grasp of the sense of proportion, a constructive capacity, or an idea of fitness for a suggested purpose, is very doubtful. The second will indicate that the author has visited and drawn examples of old work, or perhaps made careful and exact measured drawings to scale of an old building, church, palace, or mansion; but how far he has peered behind the surface and tried to analyse the motives which influenced the old men, or to grasp the difficulties they had to contend with and see how they overcame them is quite a matter of small moment as things are at present—probably the idea never occurred to him.

In the first case, we have a set of taking drawings, a plan more or less apparently workable, the elevations designed in some phase of a past architecture, and all nicely inked in with a good deal of go, carving, and figure work, perhaps suggestively indicated, but no cohesion, no definite note of character. You look at the perspective view; the building might be suitable for half-a-dozen purposes, it lacks expression.

In the second case you have a series of very pretty drawings with plenty of flick and dash—sketches of church towers, say, or old mansion houses, a piece of panelling, or a ceiling to scale, or a church screen or font, and there may be also some sheets of coloured decoration more or less approximately suggesting the present state of the original, with all the blemishes shown to the life; but how seldom anything more! How rare to see the subjects really studied, the materials analysed, the detail and construction investigated!

Now in the preparation of studentship drawings it seems to me that draughtsmanship as such should occupy a secondary place. It is not the first essential by any means. The quality of the paper used, the tone of the ink, the breadth of the line, the way in which carving should be indicated, how mouldings should be tinted in. None of these things are of prime importance; undue attention to them will not make you a better architect. What you want to be able to do is to show as clearly as you can that you have made a thorough study of your subject. If it is a design for a new building, get your plan simple and straightforward; if an awkward site is purposely given, fit in your building skilfully and directly. Do not sacrifice everything to a hobby or a piece of empty cleverness. Get a sense of proportion and of dignity or homeliness, as the case may be, or both combined, into your composition. Ignore striving after effect as such. Make it apparent that you have considered the most suitable materials to be employed and the most judicious use of them. Do not neglect your construction. Do not overlard your design with ornament everywhere; if you want sumptuousness, you can get it by concentration more effectively than by diffusion. If it is a building for a town site, do not neglect such practical points as lighting. Do not put heavy cornices or other projections in positions where they will obstruct light and air, or where they will not be visible. Do not place your sculpture where it could only be seen at an angle of 60 deg. or not seen at all. Avoid unnecessary projections that would in reality only catch and hold dust and dirt, to be blown into the windows whenever occasion offers. Do not propose a scheme of colouring that will probably be obliterated after the first six months. Be reticent, appropriately dignified. Give your attention to these and other such points, and do not be afraid. There will be plenty of scope left for a building with character, expression, and individuality, and see that your drawings express the building and its nature, just as the building itself should express its uses. Let them be clear, straightforward and simple. If a perspective is required, let it not be set out from an impossible point of view. Apply the same rules generally to whatever the subject may be. Leave the books alone. There are far too many books to refer to nowadays. Sit down and let your mind have free play, and think the subject out from the beginning. By doing so you are training yourself for the real work of the future, and for tackling the real buildings you all hope to erect. There will be much harder and more complex problems to face then, but you will be able to deal with them far better by overcoming the ones of the present, and whether you win your studentship or not, you should come out of the ordeal feeling stronger and more capable by having manfully faced the real issue, by having trod the narrow path and not the broad road. If, on the other hand, you are asked to submit studies of old work, go and examine the old buildings thoroughly; try to put yourself in the place of the old men who built them; realise, if you can, the conditions under which they laboured; look how they made

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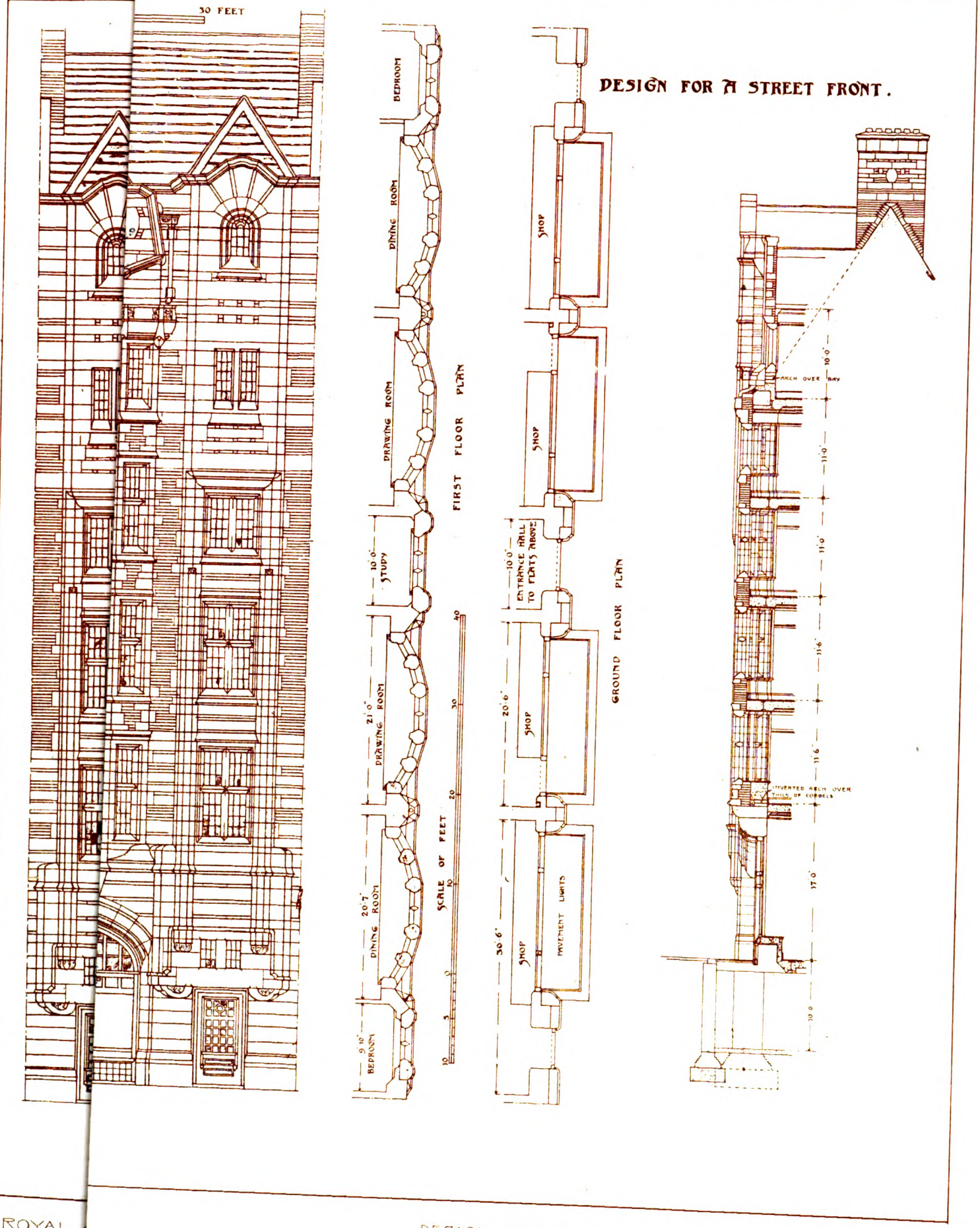

DESIGN FOR STREET FRONT. By A.E. CORBETT.

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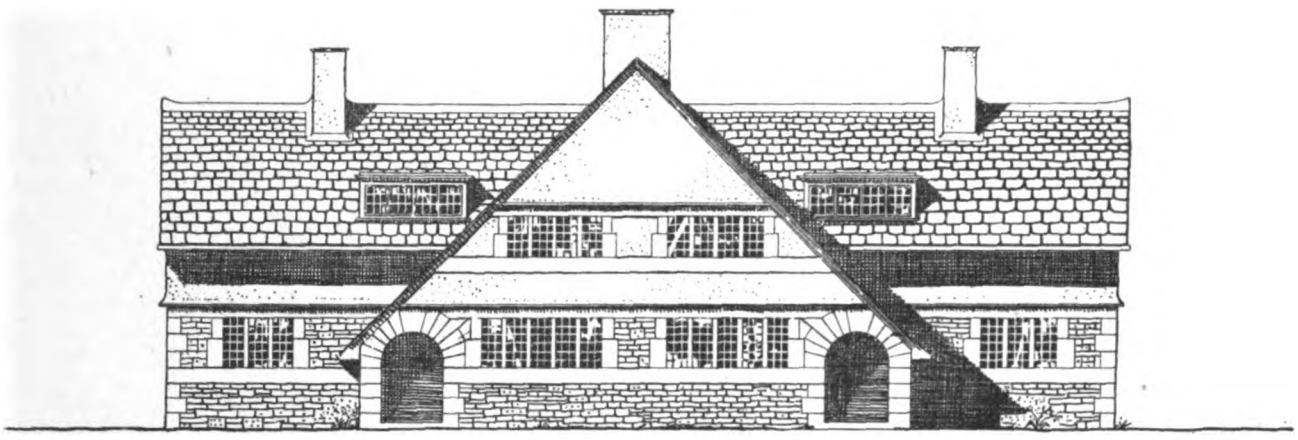
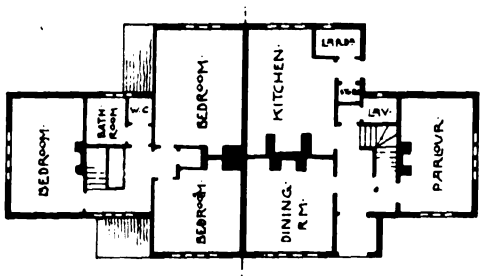
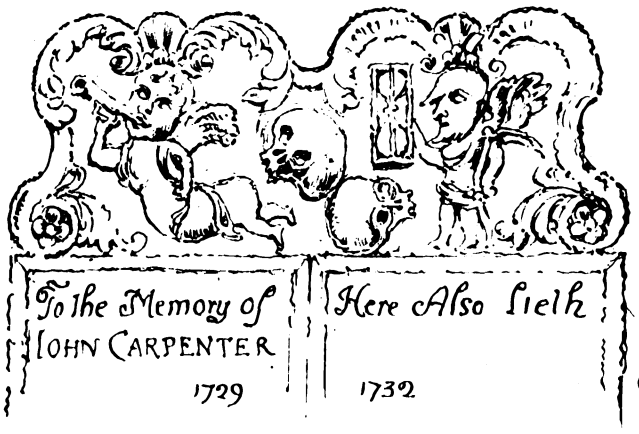




BEDROOM PLAN. GROUND FLOOR PLAN.

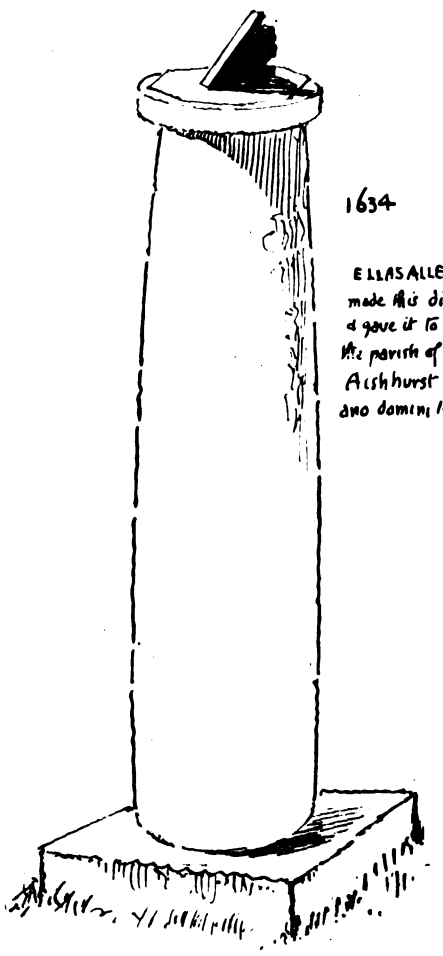
FRONT ELEVATION OF A PAIR OF SEMI-ATTACHED HOUSES.

R Heywood Haslam Arch^{t}
Clun House
Surrey St. Strand



Old Tombstone at Leigh

AN OLD CHURCH BELFRY



AN OLD SUN DIAL

AN OLD INN SIGN

HES BY T RAFFLES DAVISON N°1310

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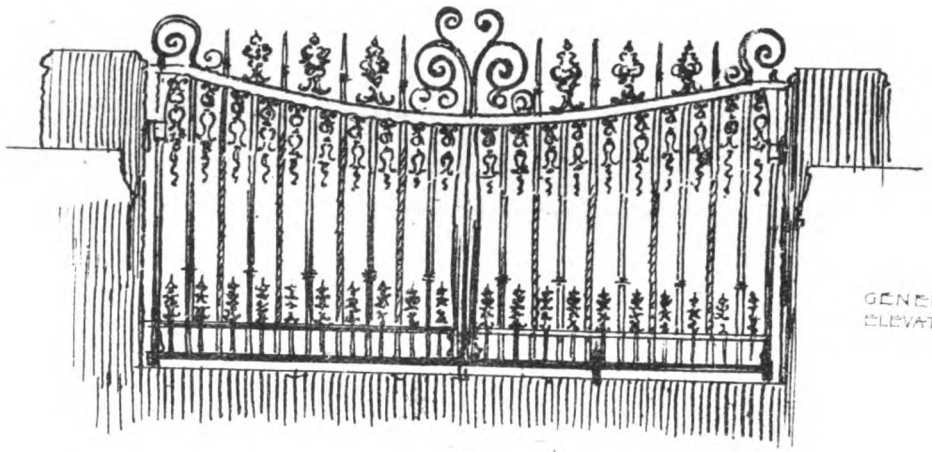
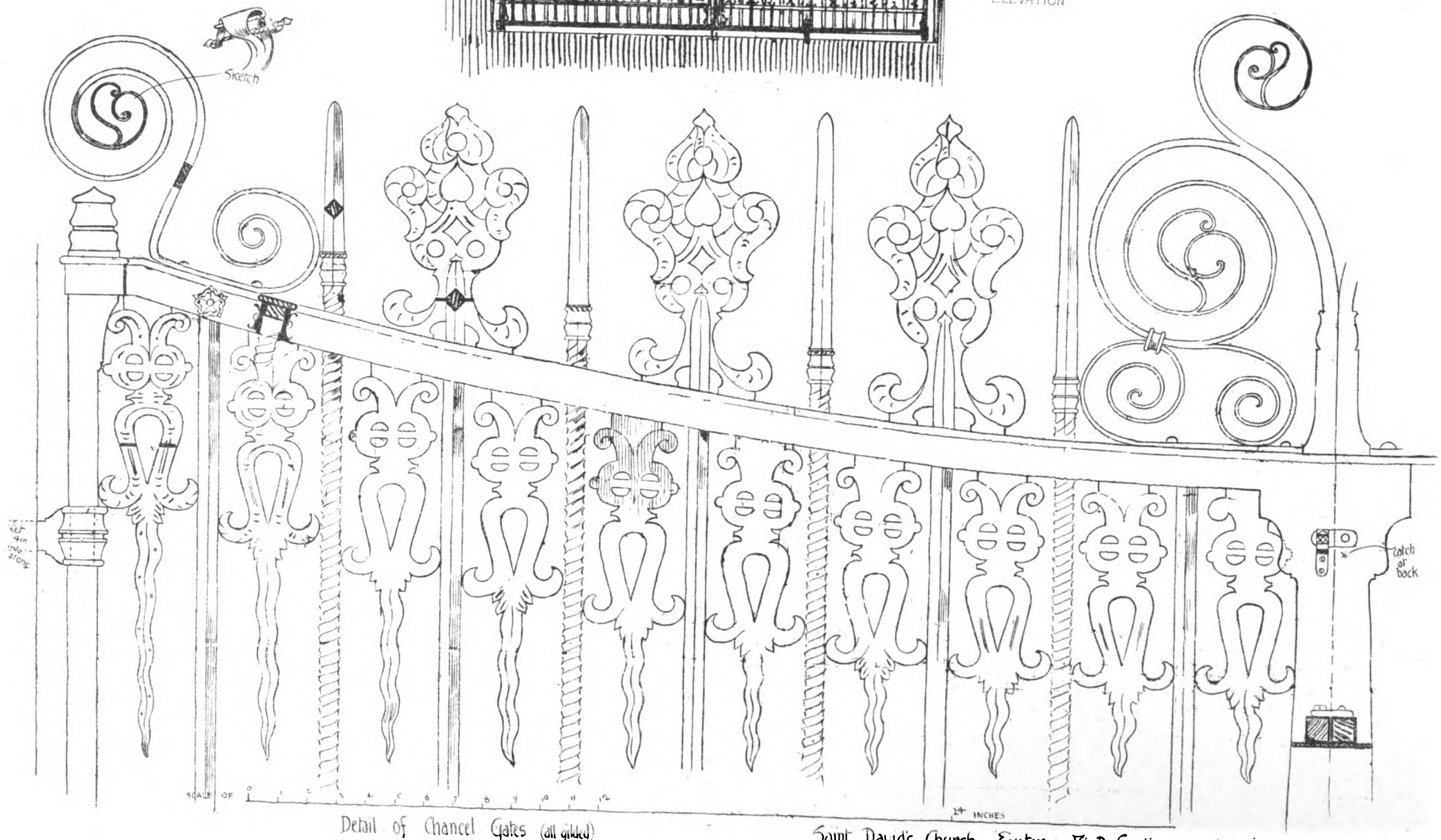


GENERAL ELEVATION



Detail of Chancel Gates (all gilded)

Saint David's Church Exeter W. D. Caroë C.I.A. Architect

SKETCHES By T. RAFFLES DAVISON Nº 1311

THE BRITISH ARCHITECT, JAN 11TH 1901
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the most of the materials to their hand, and see how they overcame their difficulties, and how sometimes they did not, and had to remedy things afterwards; take warning from their weaknesses; admire their general skill and foresight; and learn what is good to be learnt from their experience; but do not think you are going to imitate them, because you cannot if you try. Conditions are entirely different, and what was straightforward and right in the thirteenth century would be more often than not an affectation now; but come away, if you can, imbued with a desire to emulate them by trying in your day and generation to tackle your conditions as they did theirs, and show by the results of your study that you have grasped this. You may not win your prize, but you will have learned more than if you had done nothing but brought back pretty water-colour drawings and notes of useful cribbable detail.

I do not wish to say much more now, although there is no doubt a great deal more that might be said. Do not forget that you are young, and being young, you have enthusiasm, which should carry you far and overcome many difficulties. Do not bury it in the slough of past styles of Italian Rennaissance, of Francis I., of Thirteenth Century, of Roman or Byzantine or Periclean Greek. Do not let yourselves be mere draughtsmen, but be men, and acquit yourselves like men, modern men, men of the new century which has just dawned. Yours will be the task to grapple with its complexities and its new problems. Try to make the complexities less complex and the problems more simple. Prepare to tackle them with a stout heart and with determination, foresight, and common sense. Do not mistake the shadow for the substance. Do not be slaves to a past which you probably do not understand. Do not study old buildings exclusively, but look at the works of great modern architects like Butterfield or Mr. Philip Webb, men who have learnt the useful lessons that the past can teach better than most men, but who can never be classed with the copyists or whose work can never be labelled with the tag of a dead style. They have worked in the period nearest to you, and have understood and tackled its difficulties. Where they have succeeded there is room for at least a hope that you will not fail.

AMERICAN ARCHITECTS AND ARCHITECTURE.*

By ROBERT S. PEABODY (BOSTON).

AS a national institution our first duty is to our country. We all wish to help to our utmost those in authority in their endeavours to make our Government architecture more worthy of the greatness and intelligence of the Republic. In the City of Washington the whole country has an admirable object-lesson. No city is more full of architectural warnings. None better exemplifies in its buildings what is and what is not architecture. One does not need a professional education to feel mortified at the sight of certain buildings that have been thrust upon these beautiful highways in comparatively recent times, though what architecture is and of what it is capable is thrown in the face of the most stolid citizen, whenever his eye is turned beyond the crowded avenue, to the green park and the long lines of the marble Capitol, and to the great white dome rising grand and noble above them into the morning mists.

As we feel all this very deeply, we have reckoned it a great privilege that the National Government has, of late years, consulted with our officers and members regarding work in charge of the Treasury and several other departments. On these occasions, and at all other times, we have advocated in an unselfish manner all measures that might lead to added dignity in our permanent Government buildings and greater stateliness throughout our National Capital. If great Government buildings are to be scattered about the country; if a boulevard is to traverse the National Capital; if the future buildings for the Government are to be effectively placed in this beautiful city; if the White House, in which we all take such pleasure and pride, needs to be increased in size, we want each and all of these works carried out by the best artistic skill that the country can produce and by nothing less efficient. Nor are we alone in this wish. So far as I have observed, the public aspires to even better things than our best talent produces. They want the very best. Now that architecture is a matter of active interest to great numbers of people in all parts of the country, it ought to be possible to bring to life again the admirable artistic spirit which 100 years ago planned the City of Washington, and built its earlier and best monuments.

The current newspapers state that the supervising architect of the Treasury has advised in his report that the supervision of Government work designed by private architects be in charge of the Government office. I hope our good comrade will find some other remedy for whatever difficulties there are in applying private practice to public work. An architect's business is to build buildings not to sell drawings. The designer's supervision, at least of artistic details, is most essential to success, and it is certainly common opinion that all over this country the constructive portions of great buildings are superintended for private corporations by their architects in more energetic and economical ways than those that the Government has usually been able to adopt. It seems to me, therefore, that if the supervising architect has had some unfortunate experience, or if the Government demands more exactness and routine than private clients, the employment of a really efficient clerk of works on every building, paid for by the Government and under the control of the architect, in addition to his supervision, would probably afford a full cure for such trouble as may exist.

PROFESSIONAL DISCIPLINE.

That the American Institute of Architects should discipline such few of its members as act dishonestly or unfairly seems to need no argument. Such punishment should be clear and decisive. It is not a light matter. It is a very important one. Although few of us would be in the Institute if discipline were its only object, still it is very desirable that we should claim a high standard of conduct, and even of etiquette, from our fellow-members. It is one of the objects of our association. We may consider that we are agreed upon this. We all feel this so strongly, that, when professional opinion attributes improper conduct, and when adequate discipline does not follow, there is a widespread outcry that your Directors and Judiciary Committee are weak-kneed. This course of reasoning is not just, and I think it important to discuss this subject thoroughly, and decide exactly where the trouble, if any, lies. If it is possible, let us improve our methods.

To dispense absolute and complete justice, we should need the full machinery of the Courts. We can be thankful it is not often required. All we can hope to do is to express professional opinion, but we should be adequately prepared to do this.

Where we fail, or appear to some to fail, it is evident that the chief difficulty lies in the method of presenting charges. The Judiciary Committee is elected by you from your own body, and its members, presumably, are as ready to discipline as you. But what are they to do if, as is bound to happen, the charges are carelessly framed, perhaps by angry or biased persons, in such manner that they cannot be substantiated? And what is to be done if, as also happens, those who bring charges are too little in earnest to appear at the hearing or furnish needed information? Plainly, it is impossible for the Judiciary Committee to formulate charges or add anything to those made by others. Its duties are those of a court, and none of our national customs permit the committee to be both court and prosecutor. Besides, it should, in justice, protect the rights of the individual as well as the interests of the profession. Hence, the Judiciary Committee has, properly, as I think, declined to go through the form of trial of any individual or firm unless definite charges and specifications have been submitted to it. The question is, therefore, how shall the ungracious task of prosecution be performed?

It is more difficult to produce testimony and prove a point before a National Committee than a local one. In the local Chapters, where many are keenly interested, and

* Extracts from the Presidential Address delivered at the Convention of the American Institute of Architects in December last.

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the facts are easily obtained, an investigation is more readily and justly made.

Hence, possibly, the very best solution of all this problem lies in the proposition on which you are to vote, that a man expelled from his own Chapter shall cease, *ipso facto*, to be a member of the Institute, though he may retain the right of appeal. This arrangement would dispose of most cases that are likely to arise, and the Judiciary Committee would thus become, in most instances, only a board of appeal for cases decided by the Chapters. For this, the present machinery would suffice.

COMPETITIONS.

Our controversies centre mainly around competitions, but no one can deny that even in this nerve destroying and objectionable side of an architect's work, public sentiment is far more healthy than it was. Probably we cannot do away with competitions, but the public in a short time always accepts what the self-respect of the profession courageously demands. To-day there are far more competitions that are limited and paid than formerly, and to the great benefit of employer and employed. To-day far more architects insist on these restrictions, and in the long run they gain by it. Public opinion has governed very strictly far more hateful things even than competitions; for instance, the practice of duelling, and it can be trained, and I believe it is being trained to ameliorate competitions.

THE STANDARD OF PROFESSIONAL ETHICS.

The older of those among us must all recognise that the term "unprofessional conduct" is now applied by general consent to practices which were not long since of not unusual occurrence, and that a distinct advance in this direction has accompanied the increase in numbers and power of the Institute. But to demand a definite written code of ethics is to ask for something difficult of attainment. They have never been simple to frame, and their enforcement has brought many a church and association to grief. In our case it would be difficult to state precisely what code should be enforced, even if it were agreed that any should be enforced. Happily, though we may feel helpless to form a code that we all agree upon, yet all these codes were, in fact, summed up once in a very few sentences that might well be printed in those journals which now print our less widely accepted codes. These sentences inevitably form the basis of all our discipline. Differ as we may in small details, we all know that upright, professional conduct means nothing but being a gentleman; and we are sure that all codes of professional ethics finally reduce to the Golden Rule.

ARCHITECTURE AS AN ART.

It is charged that, as a body, we do not encourage original work, and that architecture, as understood by those influential in our affairs, is only a repetition of old forms and well-worn ornaments, applied without reason and as veneers to absolutely new constructive methods. Even if varied opinions assert themselves, it is said that most of us produce nothing but imitations, more or less feeble and inappropriate, of Parisian work, of Mediæval England, of Italy in the fifteenth century, or of classic Rome itself. Perhaps the professors of architecture are worse than the architects themselves. They are described as "brooding like a blight over their schools," as lauding "symbols and figments," as "harkening to echoes," as pilfering "the spontaneity and charm of youth," and as setting up "the infallibility of tradition." But the body of American architects, as a whole, are included in these anathemas, and we are told that the hope of the art lies with a new school that is to encourage indigenous and inventive architecture for America.

Those of us who have had as long a professional life as myself remember that in our early days the world of architecture was going to be changed by adherence to Mr. Ruskin's formulas, if not by loyalty to mediæval ideas. Since then, the pendulum has swung backwards and forwards, until we are coming to think that it does not matter whether the swing is to the right or to the left, but only whether the clock thus regulated is true to time. The chief value of any new movement is to be found in what it produces, and I believe that when it produces the interesting results we sometimes see, it will be found that they rest on immutable laws, well known and applicable to other and quite different work, and we shall find it passes for new only because of new or enthusiastic methods of presentation.

Happily, as I think, the horror of adapting to our uses ornamental forms endeared by long association is not widespread. Most of us shudder to think what our land would be if subjected to "a liberation of the creative impulse." This fear of plagiarism never affected architects in other ages. Wilars d'Honcourt, for instance, after sketching the chapels of Rheims, writes:—"In the next page you may see the elevations of the chapels of the Church of Rheims on the outside from the beginning to the end, just as they are. In the same manner will be those of Cambray if they are rightly made." Forthwith he makes his piers at Cambray like his sketch of Rheims, which really varied somewhat from the actual work now to be seen there.

* * * *

It was said that our old university pastor thus lamented the conflict of sects and dogmas, when they all should tend to one and the same end. There was a farmer, he said, near Albany, who raised grain. And when the grain was ripe one man told him to take it to market by rail, and one by the canal, and still a third by the road. But when he got to market he found that nobody asked him anything but *whether the grain was good.*

RECENT ACQUISITIONS IN THE VICTORIA AND ALBERT MUSEUM.

A VERY important collection of pictures, both in oil and water-colour, was left to the Museum during the summer by the late Mr. H. S. Ashbee, of Fowler's Park, Hawkhurst, Kent. Among the water-colours are many important examples of that peculiarly English art, both of the early school and of recent times. Michael Angelo Rooker is represented by six small sketches for illustrations to novels by Fielding. There are seven drawings by Thomas Rowlandson, some of them evidently being sketches he made when travelling about the country. The drawing of Lincoln, by J. M. W. Turner, is a beautiful example of that master's earlier period. By the side of it is another little sketch by the same artist of some boats on the seashore. Thomas Hearne, F. Nicholson, W. Payne, and George Barret are all represented. The picture of "Waltham Abbey" is by John Varley, as also is another of "Harlech Castle" and "Cardigan Bay."

The paintings of "Venice," "A Swiss Chalet," and "A Pier Head" are the work of Samuel Prout. Above them is a drawing by W. J. Mullen, and on the same screen are two pictures by David Cox, one "The Fern Gatherers," and the other "A Saw-pit." Peter de Wint is represented by several pictures, and in one case the artist has used both sides of his paper, which, no doubt, was a leaf from his sketch-book. Two quaint pictures of country inns, by W. Fearnside, are painted to a considerable extent in body-colour. Among the artists of the modern school represented in the collection may be mentioned Sir J. Linton, J. D. Watson, H. J. G. Hine, W. L. Leitch, T. Collier, E. H. Wimperis, and J. Fulleylove.

Three screens are devoted to the oil paintings from this bequest. There is a large landscape by Copley Fielding and John Linnell, and another large painting of the "Halt by the Jordan," by John Linnell alone. Sir John Gilbert is represented by two paintings of subjects from "Don Quixote." Mr. Ashbee was much devoted to the study of Cervantes, and it will be noticed that several pictures in this collection illustrate the adventures of the Spanish knight and his faithful squire. Mention may also be made of the very interesting collection of water-colour drawings prepared by L. F. Cassas, to illustrate the "Voyage Pittoresque et Historique de l'Istrie et Dalmatie," published in 1802.

Another bequest which has been received recently is from the estate of the late Mrs. Carr. It includes a large water-colour drawing of a view in Westminster Abbey, by Joseph Nash; a "Wood-yard," by Peter de Wint; "Kilgervan Castle," by W. Havell; and a "Sunset off Hastings," by Copley Fielding. In this collection there is an interesting little drawing of the British Institution, by Stephanoff.

At the death of Mr. Henry Vaughan some valuable

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works of art passed by bequest into the Museum collections. An Italian late 15th century bas-relief in white marble of a female head and bust in profile is one of the most important items. The examples of carved woodwork include a walnut frame attributed to the Barili, uncle and nephew, who worked at Siena and Rome in the early years of the 16th century; two Italian carved walnut mirror frames, and several panels of French workmanship dating from the brilliant period of François I. Two large studies in oil by J. Constable, R.A., for many years on loan at the Museum, were included in this bequest, as well as two drawings by J. M. W. Turner, R.A., placed with the other water-colours by the same artist in the galleries.

A representative collection of lace amounting to 114 pieces has been recently given to the Museum by Mrs. Ambrose Rathborne. It fills three small cases, placed at the south-east corner of the loan court. Of Venetian raised or "rose-point" lace of the 17th century there are five borders, and there are also two pieces of black needlepoint lace from Italy. In the same case is a fine needlepoint falling collar of the middle of the 17th century with raised flowers. There are also examples of the somewhat later needlepoint laces of Alençon and Argentan. Several specimens of Flemish pillow-made lace of the 17th century, and borders from Brussels, Mechlin, and Valenciennes of the 18th century are also included in this collection, together with examples of fine white silk lace of Normandy, the "blonde de Caen," the production of which has now almost quite died away, giving place to machine-made imitations. There are one or two specimens of English and Irish laces of our own time.

GLASGOW INTERNATIONAL EXHIBITION BUILDINGS.

THE Glasgow International Exhibition buildings are now practically complete, so far as their external structure is concerned. More than two years have elapsed since the project of organising an International Exhibition in 1901 was decided upon, and the construction of the buildings has been carried on smoothly and effectively all through, although the recent wet and stormy weather has somewhat retarded operations, but it is anticipated that, notwithstanding these hindrances, remarks the *Glasgow Herald*, the buildings will in a few weeks be quite ready for the reception of the exhibits.

The exterior of the Exhibition is designed after the style of an Eastern palace. Mr. James Miller, the architect, has chosen as his style of a building a phase of Spanish Renaissance which flourished in the 16th century; but although the design is touched with Spanish characteristics, the general feeling is decidedly Eastern. In general character and picturesqueness the buildings will harmonise well with the new Art Galleries. The style is most conspicuously developed in the Industrial Hall, which constitutes the main portion of the Exhibition.

The grand, or ceremonial, entrance is towards the park, in the centre of the north façade, nearly opposite the bridge to the east of the museum. The front of the building is deeply recessed, so as to form a piazza about 200 ft. long by 100 ft. wide, behind a peristyle of a double range of classic columns 30 ft. high, which, forming a screen nearly 200 ft. long, continues the line of the north part of the buildings. The piazza will be paved with white cement, with a large geometrical design in black. Right round the whole building there runs an arcade of arched windows, the openings being divided by balustrades, which are supported in a very artistic manner on cherubs' heads moulded into the cornice beneath. These arches are flanked at the end of each bay with corner towers about 32 ft. square, rising to a height of almost 60 ft. The towers are surmounted with flattish domes—a feature of the period from which the style has been taken terminating with flagstaffs carrying national flags. At the centre of the side wings there is an ornate hanging Spanish balcony, at the top of which will be erected a huge figure supporting a great torch emblematic of electricity.

The approach to the grand entrance is made by a great flight of steps, rising from what will be the main promenade in the Exhibition. This promenade will extend from the Russian section, and will have a continuous stretch on the east side past the Canadian section, along the front of the Industrial Hall and Art Galleries, terminating at the east of the Kelvin valley. Entrances of a less imposing character are provided in Sandyford Street and Gray Street. The Sandyford Street front will likely form one of the principal entrances for the public, as the electric cars will run right up to the door. The central feature here is entirely different from that at the entrance in the main façade. It is flanked by two tall towers, and projecting towards the street there is a huge semi-dome bulging out into a verandah, thereby giving a variety of curve which harmonises well with the straighter lines of the towers and gables behind. The Gray Street front is flanked by two tall towers, about 120 ft. high, with a great, deeply-recessed semi-circular arch, springing about 20 ft. off the ground, and nearly 50 ft. in diameter. A verandah runs along the whole length of the towers. There will also be an entrance to the Exhibition from Dumbarton Road, opposite the main entrance to the Art Galleries, leading into the main avenue.

The striking feature of the whole design, however, remarks our contemporary, is the group of towers in the centre of the industrial section. It is composed of a great central dome, surrounded by four huge towers rising to a height of about 160 ft. From the apex of the dome, which is 135 ft. from the ground level, there rises a beautifully-decorated fleche, 32 ft. high. Resting on the fleche there is a figure emblematic of electricity, similar to that placed on the top of each of the Spanish balconies on the main façade. The whole dome, which is constructed of iron, rises, with its surmounting fleche and figure, to a height of 180 ft. The four towers which surround the dome at an effective distance form at their base the corners of an open arched balcony, to which visitors will have access by means of two electric hoists in the south-east tower and by staircases built within the north-west tower. This balcony is 500 ft. in circumference. Between the dome and the four main towers, and in line with the diagonals of the latter, have been erected four artistically-designed minarets.

The whole group of minarets, towers, and dome makes a unique spectacle, and gives a bold and striking character to this central part of the design. The cupolas of the four great towers and also the cupolas of the minarets will be covered with gold; the main building will be finished in pure white, while the roofs of the domes will be painted pale green. A fine contrast will be made by the decorative treatment of the eight corner towers. These will be covered with red Spanish tiles, and the corrugated iron running along the roof between the towers will be painted a bright orange tint, while the woodwork of the red-tiled widespreading eaves will be treated in green. The whole of the external finishing of the buildings, including all the decorative work, is formed of fibrous plaster, composed of stucco, canvas, and wood. This material is run into a mould and allowed to harden. The plain work is made in boards about 2 ft. by 4 ft. $\frac{3}{4}$ in. thick, nailed to a wooden framing pointed, and then flushed up in stucco when in position. The ornamental work is cast into large moulds of the same material.

The buildings are really in one great piece. The section which will be devoted to industrial exhibits comprises the main part of the interior, the other great department being the machinery section. At the west end of the Industrial Hall a grand avenue has been constructed to connect these two portions. This avenue will be one of the most interesting features of the interior. It is 75 ft. wide and 40 ft. high, formed of semi-circular wood-laminated arches carrying a glass-worked roof, supported on iron astragals. The avenue sweeps to the west and south with a graceful curve and forms the main artery to the Machinery Section, which has been erected on the Bunhouse grounds. The roadway between the end of the avenue and the Machinery Hall is spanned by a wooden bridge, built on the cantilever principle, which clears the traffic at the height of 18 ft. 3 in. The bridge, which is roofed in, is approached by an incline, and at the far end joins the level of the gallery which runs round the Machinery Hall. In the Exhibition of 1888 visitors entering by the Sandyford Street doorway had to descend a flight of steps, but the present buildings have been planned so that one can walk from end to end without ascending or descending a single step.

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COMPETITION CONDITIONS APPROVED BY THE AMERICAN INSTITUTE OF ARCHITECTS.

THE following are the conditions of competitions approved by the American Institute of Architects at their thirty-fourth annual convention held last month:—

A competition as a means for the selection of an architect may properly assume one of the following forms:—

(*A*) *Limited* to a certain number of architects, each of whom is invited to take part.

(*B*) *Open* to all who desire to enter or to all of a certain class.

(*C*) *Mixed*, certain architects being invited, but others being at liberty to take part.

Payment of Competitors.

In all competitions the first prize should be the award of the commission to design the building and superintend its construction, and the programme should definitely state that the successful competitor will be so retained, and that he will be paid for his services at the rates established by the American Institute of Architects.

In certain cases, however, this procedure may not be legal, then the course to be pursued as to the successful competitor should be clearly stated.

To provide for the contingency of delay or of the discontinuance of the work, the programme should provide for a substantial payment to the successful competitor on the award of the competition, such payment to be regarded as on account of the final commissions.

Payment to unsuccessful competitors should be as follows:—

In Limited Competitions each should be paid a fixed amount.

In Open Competitions prizes fixed in number and amount should be provided.

In Mixed Competitions the two classes of competitors should be paid in the manner above described.

The Professional Adviser and the Jury.

It is highly desirable, in the interests of both owner and competitors, that a professional adviser should assist in the preparation of the programme, and that the professional adviser or a competent jury, consisting at least in part of experts, should assist in making the awards.

The professional adviser or jury may have full power to make the award, or they may select a number of designs and, placing them in the order of merit, leave the final choice to the owner or his representatives.

Where possible, the adviser or the jury should make a positive report, and in favour of one design, and recommend the employment of its authors as architects for the building.

The Programme.

The programme should be so drawn as to form a contract. It should—

(*a*) Name the owner of the structure forming the subject of the competition, and state whether the owner institutes the competition personally or through representatives. If the latter, name the representatives, state how their authority is derived, and define its scope.

(*b*) State the kind of competition to be instituted, and, in limited competitions, name the competitors; or, in open competitions, if the competition is limited geographically or otherwise, state the limits.

(*c*) Fix a definite time and place for the receipt of the designs. The time should not be altered except with the unanimous consent of the competitors.

(*d*) State the limit of cost, if fixed; the desired accommodation, and the conditions of the site.

(*e*) Fix uniform requirements for the drawings, giving the number, the scale or scales, and the method of rendering. As the presentation of a general scheme (rather than of a design perfectly studied in all its parts) is the object of the drawings, they should be of the simplest kind capable of explaining such a scheme.

(*f*) State whether the submission of more than one design by a competitor is forbidden or permitted.

(*g*) State whether the competition is to be anonymously conducted or not, and, if anonymously, provide the method.

(*h*) Name the judge or jury or provide a method for their selection. Define his or their power.

(*i*) Provide for the placing out of composition of any drawing which violates the term, or of any set of drawings whose authors have so disregarded the terms as to deserve the extreme penalty.

(*j*) Provide that during the competition there shall be no communication upon anything relating to the competition, except in writing, between any competitor on the one hand and the owner, or any representative of the owner, the professional adviser or any juror on the other, and that any information, whether in answer to such communication or not, shall be given in writing simultaneously to all competitors. Set a date after which no question will be answered.

(*k*) Fix the nature or amount of the awards or prizes.

(*l*) State, in case the professional adviser or jury is not empowered to make the award, in whom such power is vested.

(*m*) Fix the period of time within which the final decision will be rendered.

(*n*) Provide for sending the decision and a copy of the report of the professional adviser or of the jury to each competitor.

(*o*) Provide that no drawing shall be exhibited or made public until after the award, and not then without the consent of the author.

(*p*) Provide for the return of unsuccessful drawings to their respective authors within a reasonable time, and provide that nothing original as to this competition in such designs shall be used without compensation to the author of the design in which it appears.

TRADE NOTES.

MESSRS. J. B. JOYCE & CO., of Whitchurch, Salop, have recently reconstructed the chimes of the clock at the fine old church of St. Mary's, Warwick, and also those at the parish church, Ross, Herefordshire. They have also just completed the fixing of the new clock outside Exchange Station, Manchester, which shows the time upon an illuminated dial fitted in a wrought-iron drum 8 ft. diameter. It is fitted with all the latest improvements including an automatic apparatus for turning on and off the gas at night. The new clock in the tower of the parish church, Sheringham, Norfolk, which strikes the hours, and shows time upon one dial 6 ft. diameter is by the same firm. Also an illuminated turret clock at the works of Messrs. Livesey Brothers, Blackburn, which likewise works an electrical dial in the engine-room some distance from the clock.

THE ventilation of Grahamston public schools, Barrhead, the erection of which has been completed, have been ventilated by means of Mackay's patent ventilators, of an ornamental design manufactured by the sole makers, Messrs. Cousland & Mackay, ventilating engineers, 150, Hope Street, Glasgow.

MESSRS. WM. POTTS & SONS, clock manufacturers, Leeds, have just completed the erection of a new large turret clock at St. John's Church, Ealing, W., the above showing the time upon three external dials 7 ft. 6 in. each in diameter, and striking the hours. The vicar, churchwardens, and committee have expressed themselves well satisfied with the work,

AT the last monthly meeting of the Metropolitan Public Gardens Association, it was reported that amongst a number of sites, in regard to which action had been taken with a view to their use by the public, were the enclosure in which Canning's statue stands at Westminster, the Lammas lands at Fulham, Prince's Square disused burial-ground, Cable Street, E., Telegraph Hill, vacant land at Raynes Park, S.W., and a circular-sunk garden in Hyde Park adjoining Park Lane. It was stated that the association had made representations to the Hackney Borough Council to restore to their proper use, as gardens open to the public, parts of Hackney Churchyard and St. Thomas's Square disused burial-ground, which had been closed and diverted to other purposes by the late vestry. The financial statement presented showed that during the eleven months of the present year the income had fallen off to the extent of about £700, as compared with the same period in 1899.

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The British Architect.

LONDON: FRIDAY, JANUARY 18, 1901.

THE R.I.B.A. STUDENTS' COMPETITIONS.

THE exhibition of students' work submitted in competition for the various prizes and studentships offered by the Royal Institute of British Architects, and which is located in the gallery of the Alpine Club (Mill Street, Conduit Street), is an exceedingly interesting one, notwithstanding that the two principal competitions have fallen flat. In point of numbers we do not think the competitions have filled up so well for some years past. For the Measured Drawings Prize there are 8 competitors; for the Soane Medallion, 22; for the Tite Prize, 26; for the Grissell Gold Medal, 18; for the Pugin Studentship, 9; for the Owen Jones Studentship, 6. The Essay Prize alone failed to attract, there being only three competitors. Possibly this is due to the fact that few students are capable of literary effort at the best of times, and a well-illustrated, well-written essay means a tremendous lot of real hard work. The subject set this time was "The Comparative Desirability of the Formal or Irregular Treatment of Street Architecture in Large Cities," an interesting study certainly, but demanding more of experience and ripened judgment than usually falls to the lot of the average architectural student.

But whilst there have been plenty of competitors, and much interesting work as the result, yet we cannot help noting and regretting, as we have again and again deplored in the past, the evident lack of direction in the students' studies, so that it often happens that genuine industry, and often genuine ability, are fruitlessly spent.

THE SOANE MEDALLION AND £100

The subject for this competition was "A Design for a Club House in a Large City," and proved very attractive, there being 22 competitors, represented on the screens by 140 strainers. But the average result in point of quality is very poor indeed.

The design by "Q. E. F." appears to us to be the best of the lot, excepting that it fails in the ground floor level. It is exceedingly good as a whole, however, and the effect produced is one of very considerable dignity. The composition shows that a dignified type of Renaissance need never be uninteresting or wanting in picturesqueness. The plan is cleverly laid out, with a central hall and galleries surrounding it.

Quite one of the best designs is the one marked with an ace in a kind of ornamental shield. The main front in this design is set back to a flat segment, and has a projecting portico with open peristyle and dome over. The plan is very clever, and contains some admirable effects. The back elevation of the design is excellent.

The author of "Pan" is, we are sure, capable of good things. His design is original and clever, and the detail drawing is admirable. If it followed the vital principles of good architecture the author's resources would not have been wasted.

One of the most striking designs is that marked "Thor,' of a Renaissance type, between Gothic and Romanesque, in which vertical lines predominate to an almost distressing extent. The plan is well laid out.

"Fordingbridge" is another clever Renaissance design, perhaps more suggestive of a technical school or art gallery than a club-house.

"Ionic" is a well-proportioned design, though rather *a la* Banquetting House at Whitehall. A carefully laid-out plan is a noteworthy feature of this design.

"Thistle," also, is a good design, a little less rigid than the last-named, but not so satisfactory in general proportion. As a matter of fact the back elevation is much better than the front.

"Elsa" has an excellently inspired design, but not satisfactory in its proportion.

"Post Fanum Vacunae" is a somewhat gaol-like design, but is well proportioned. The plan has some admirable points, including a central area.

"Red Seal" is a Greek design, with an open loggia in the upper story. Not completely satisfactory in its proportions.

"Pembroke" has some daintily-drawn elevations, but the design savours too much of a small town hall.

"Hal" is not a very satisfactory design, and should have had more time spent on the design and less on the drawing.

"Ace" is an original design which betrays a good deal of ingenuity and effort, and we hope some day it will be much better directed.

"Ace of Clubs" has a neatly got-up set of drawings, though the result is certainly not very happy.

"Rime" can only be described as unhappy. "Melba," in very poor drawing, emulates the most false of American architecture. "Desormais," "Grex," and "Ultimus" are all three poor.

"City" is a design with some good points. It looks much better in elevation than in perspective, and the back elevation is the better of the two.

'Hiawatha" is a careful essay with indifferent results. "Ivanhoe" is almost pitiable.

THE TITE PRIZE.

The competition for the Tite Prize (Certificate, and £30 for travel in Italy) attracted 26 competitors, the subject being a design for an entrance way to a public park.

The design, bearing the device of a lion rampant, shows good vigorous drawing. The perspective illustrates the good quality of the grouping.

"En Régele" is amongst the best of the designs, and the drawings are admirable. This design can claim some decided effect of mass.

"St. George" sends some very admirable drawings, but the result, though excellent in detail, is generally very tame.

"The Bard" accompanies his drawings with a pretty bird's-eye view, but we must say he does not thereby make out a very strong case in favour of his design.

"Pencil" shows a good deal of skill, and his design is illustrated by admirable drawings, but we wonder if the author seriously thought that the design was pleasing and effective in outline.

An original and clever design is "Le Nord," but it is very chaotic in its mixture of character, and decidedly "jumbly" in effect.

"Boadicea" is a grandiose design, of which, in the absence of a perspective, one cannot properly realise the effect. "Corona" sends carefully considered drawings.

We do not see that we can name any others as being specially noteworthy. It may be pleasant to have so many drawings, but the average merit of the work is decidedly low.

THE GRISSELL GOLD MEDAL.

The subject of the competition for this prize was a design for a foot-bridge across a stream. Eighteen designs were sent in, a number we do not remember to have seen before.

A most admirable contribution is the design marked "Pons Asinorum." First-rate geometrical drawings, with capital sketch of construction, and an admirable little sepia view, make up quite a model set. The design is such a well-proportioned and sensible scheme as instantly commends itself. We could honestly wish we even occasionally met with such nice foot-bridges. It is pleasant to come across the work of a student at once so workmanlike, sound, and sensible. He well deserves an award on almost every count, and we are not sure that we would not give him one simply for the way in which he has done the lettering on his drawing.

"Ilex" is a pleasing design. It is a pity, however, that one so excellent was not illustrated by a perspective sketch.

"Juno," in some very admirable drawings, illustrates a very simple and pleasing design.

"Shingle" is another good design, illustrated by capital drawings. "Spes" also is meritorious.

"Forward" is a quaint and well illustrated design, and perhaps the best amongst the remaining ones is "Trabs."

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This is the best Grissell Medal competition we remember to have seen. And the fact that out of the number of designs sent in some five or six are distinctly good is certainly encouraging.

MEASURED DRAWINGS PRIZE.

For the Institute Silver Medal and 10 Guineas, offered for the best set of measured drawings of ancient buildings in the United Kingdom or abroad, there were eight competitors.

An exceedingly interesting set of drawings are those of Burghley House, near Stamford, Northants, marked with the device of a cannon.

Not less interesting, and much better drawings, are those by "Stafford," of the celebrated Kirby Hall, which has done so continuously useful duty in modern architecture. In such an admirable subject as this we confess we should like to have seen less of the ruling pen and more of careful freehand studies, realising the proportion and effect of different parts in perspective.

A charming set of drawings is sent by "Cross Keys" of Walpole St. Peter's, Norfolk. Nothing better has been seen at the Institute than some of the pencil freehand in these drawings.

"Tressillian" is a set of drawings more painstaking than brilliant, though highly creditable. This student makes the mistake of crowding far too much on his sheets.

An excellent set of drawings are those marked "Roda," though not quite immaculate in the sculpture.

THE PUGIN STUDENTSHIP.

Nine sets of drawings were received in competition for the Silver Medal and £40 (for travel in the United Kingdom), which constitutes the Pugin Studentship. And perhaps not a single one of the competitors can be said to have sent a poor contribution.

A conspicuously good set of drawings is that by Shirley Harrison. His pencil work is strikingly crisp, vigorous, and sympathetic. The Market Cross at Shepton Mallet, and the inn at Croscombe, Somerset, are admirable, whilst the drawing of the font from a Somersetshire church is quite a *tour de force*.

We suppose a better collection as to variety and quality of drawings and sketches has never appeared at the Institute than are crowded on to the six strainers sent in by James Forbes Smith. Both as to drawing and colouring they are uniformly excellent.

H. Comyn makes a good show of sketches, though there are no colour effects. C. B. Pearson also sends a very good set—entirely in black and white—and a fine show in colours and black-and-white is made by James C. Cook.

THE OWEN JONES STUDENTSHIP.

There are six competitors for the Owen Jones Studentship (Certificate and £100 for travel and study of colour).

The drawings and sketches submitted by James McLachlan are, perhaps, on the whole, the most dainty and appreciative, and include some very elaborate and painstaking work.

Hervey Rutherford's drawings are exceedingly good, and Ramsay Traquair is a very strong competitor. P. E. Nobbs also shows an appreciative record of colour.

In the colour studies by E. Bennett we discover a vigour and tenderness which is lacking in the work of all the other competitors.

THE GODWIN BURSARY.

Only one application and drawings have been received for the Silver Medal and £40 (for travel outside the United Kingdom), the candidate being Samuel C. Stevens.

A MODERN VIEW OF LONDON CHURCH ARCHITECTURE.—V.

By T. FRANCIS BUMPUS.

(*Continued from page 23.*)

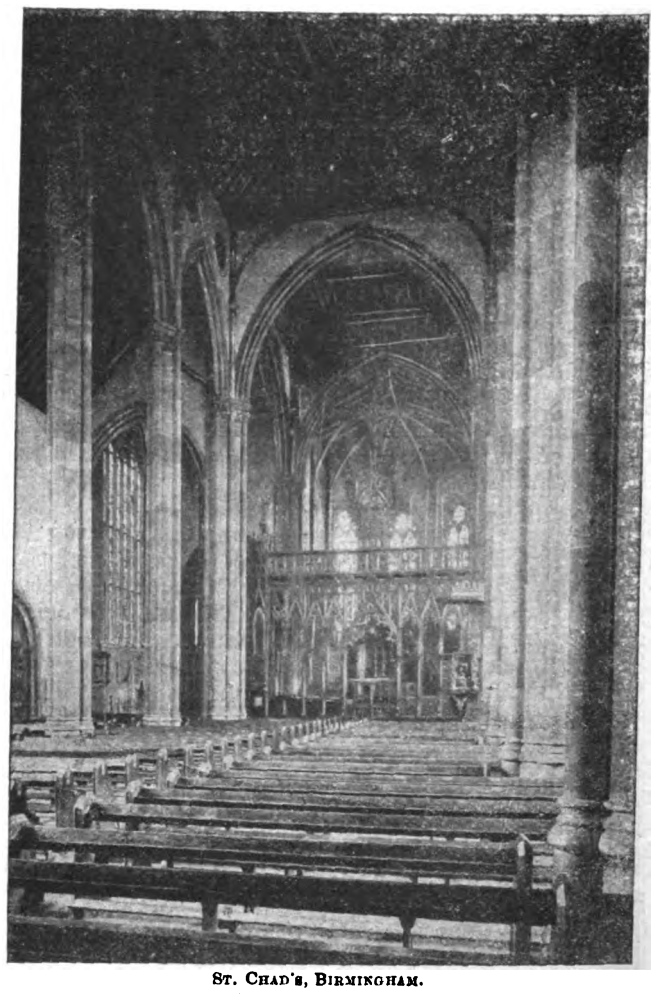
THE period of London church building comprised, let us say, between 1840 and 1860, was one of copyism of ancient precedents. With a few brilliant exceptions, design was little more than the compilation and recomposition of the *disjecta membra* of mediæval buildings. But few remembered the noble brick architecture of Flanders, North Italy, or the Baltic provinces, and in default of the costly and almost unattainable hewn stone from Caen or Portland, churches were built of the rudest Kentish rag, laid in random courses.

If an architect of this period succeeded in imitating, with more or less precision, not only the plan and arrangement, but the proportion and decorative details of mediæval work, but little fault was found with him, and, in truth, at this period the only safety from falling into mistakes lay in strict adherence to ancient precedent. For during the first 10 years of the period of our history upon which we are now entering, few architects of the day could have been trusted to work in the spirit of old art alone, without having constant recourse to books and sketches.

There are several London churches erected between 1840 and 1860, which, as specimens of successful adaptations from old work, must not be lightly dismissed.

Thus St. Paul's, Knightsbridge, was, until the recent ill-judged removal of the pinnacles from its tower, a very tolerable copy of Skirlaugh Chapel, between Hull and Hornsea, in the Holderness of Yorkshire; the spires of St. Matthew, City Road, and St. John, South Hackney, are with certain modifications copies of those at Sutton St. Mary, Lincolnshire, and St. Mary, Stamford, respectively; All Saints', Notting Hill, reproduces certain features in St. Colomb Major, Cornwall. In St. Stephen's and Holy Trinity, Westminster, the flowing and geometrical phases of the Middle Pointed style were revived with great fidelity; St. Andrew's, Wells Street, recalls those lofty Perpendicular churches that we see in York, Norwich, and Bristol; while in the fine cruciform church reared for the Irvingites in Gordon Square, certain Northern Minsters were laid under contribution.

Among the church architects of the Revival who were destined to occupy distinguished places in their profession, the names of Butterfield, Pearson, Scott, and Street belong to this period of our history, as do those of J. P. St. Aubyn,



ST. CHAD'S, BIRMINGHAM.
A. W. Pugin, Architect, 1838-1840.

Charles and E. M. Barry, Raphael, Brandon, C. A. Buckler, Talbot Bury, Richard Carpenter, Henry Clutton, Francis Dollman, Benjamin Ferrey, E. C. Hakewill, J. Norton, S. T. Nicholl, S. S. Teulon, William Slater,

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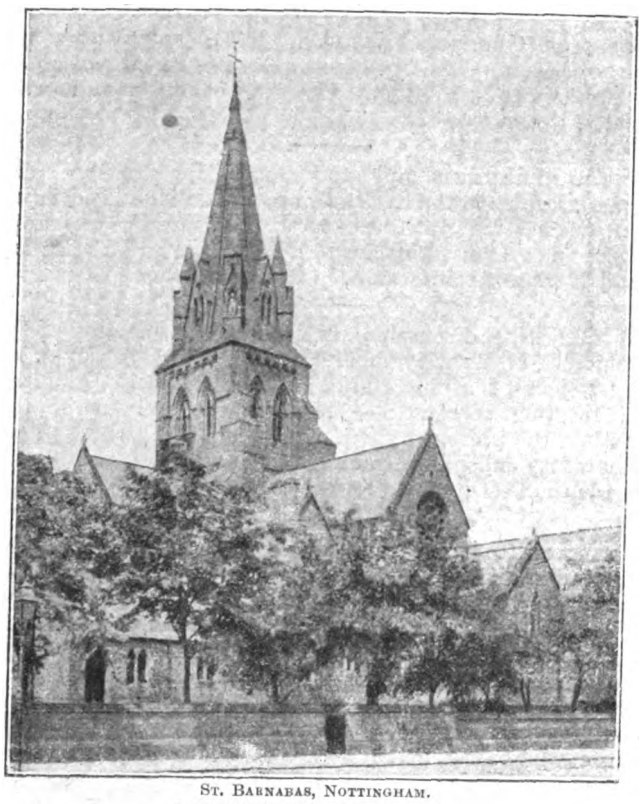
William White, and Henry Woodyer, all of whom have added to the noble edifices bequeathed us by the Middle Ages others not unworthy of their prototypes.



ST. BARNABAS, NOTTINGHAM.
A. W. Pugin, Architect, 1841-1844.

Among the older practitioners, Barry, Cundy, Hardwick, Poynter, Salvin, and Scoles deserve mention. Bentley, Blomfield, Bodley, Burges, Brooks, Goldie, Norman Shaw, Micklethwaite, Seddon, Somers Clarke, and the brothers Sedding belong to a phase of the Revival which our history has not yet reached.

Augustus Welby Pugin and William Wardell were largely employed in the erection of Roman Catholic churches. Some of these, of great excellence, were built in London, and therefore claim to be included in our history.

During the later thirties several churches of great size for the communion which he had embraced, and in a style far in advance of their age, proceeded from the pencil of Pugin, who not only had become associated with Hardman in the manufacture of stained glass upon true principles, but was saying and doing much to improve *instrumenta ecclesiastica* generally. St. Chad's, Birmingham, and St. Mary's Derby (both rather German in feeling), and St. Marie's, Liverpool, are churches of Pugin belonging to this early stage of the Gothic Revival. But for a long time his genius remained unrecognised by the Church into whose arms he had flung himself, meeting with but a cold reception from the easy-going, anti-mediæval Roman Catholics of the Italian school.

Pecuniary restrictions, or clerical interference, marred almost every one of Pugin's works. At St. George's, Lambeth,* by the instructions laid down by the committee that it was to hold 3,000 people on the floor at a limited price, height, proportion, everything was sacrificed to meet these conditions, while of late years the only really cathedralic feature the church possessed, *i.e.*, its rood loft, copied from one now behind the altar screen of Beverley Minster has been removed from its position at the entrance to the choir, and placed beneath the western tower arch, whose mouldings, when we consider the period when the church was rising (1841-48), are of singular excellence. St. Barnabas, Nottingham, was spoilt by the restriction of its style to the Lancet, a period of architecture well suited to a Cistercian church remote from the haunts of men, but inapplicable to one in the heart of a great manufacturing town, where as much light as possible was needed, while at St. Giles', Cheadle, Pugin was first enjoined to build a small, cheap church, and after its ground plan had been set, to develop it into a very costly one. Yet he was not permitted to alter that plan so much as to give the length which he desired to the chancel.

All this was naturally a source of the deepest mortification to Pugin, who was wont to remark that he passed his life in thinking of fine things, designing fine things, and realising very poor ones.*

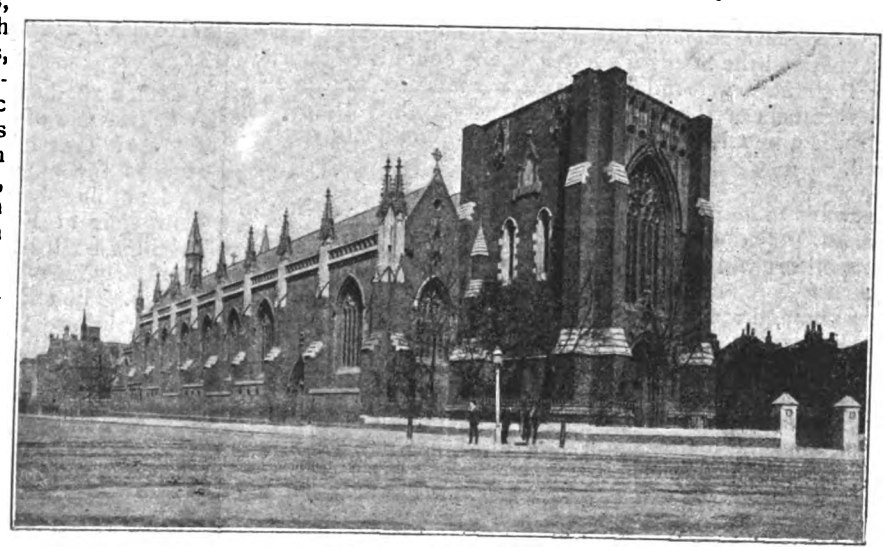
Perhaps the genius of Pugin was more deeply appreciated by members of the Church he had quitted, his advice being frequently sought by its clergy and architects.

His restoration of Wymeswold Church, Leicestershire, was considered a model of excellence, and to his facile pencil we are indebted for some of the best stained glass windows produced during the infancy of the Gothic revival, such as the Te Deum window in the south transept of Sherborne Abbey, Dorset, the Jesse window at Milton Abbey in the same county, and the great east windows of St. Mary Magdalene, Munster Square, and St. Paul's, Brighton. All these were worked out by Pugin, Hardman being entrusted with the mechanical part, in conjunction with his friend, Richard Carpenter, the restorer and architect of the churches above quoted.

Pugin also superintended the stained glass in the east window of St. Andrew's, Wells Street, and Jesus College Chapel, Cambridge, and when about this period (1850) the restoration of that architectural problem, the collegiate church of Ottery St. Mary, was approaching completion, Mr. Butterfield invited the same master hand to overlook the stained glass destined for the quintuplet of lancets in the north transept and for the clerestory of the choir, where the work exhibits much fine drawing allied with brilliancy of tincture sufficiently relieved with white, and breathing a not too excessive mediæval sentiment.

For a short time Pugin allied himself with Wailes who executed the great western and eastern windows of St. George's, Lambeth, for him, and with Warrington to whom he entrusted the glass in the apse of St. Chad's, Birmingham, but in neither case did this collaboration last long,

The works of Wm. Wardell, who died but recently, have much of the Puginic spirit, but conceived as the majority of them were, on less ambitious scales, they are to a considerable extent more pleasing. Wardell's first church built in London was St. John Baptist's near the Triangle, in Mare Street, Hackney. This was opened in or abou



ST. GEORGE'S, SOUTHWARK.
A. W. Pugin, Architect, 1841-48.

* Pugin's original design for St. George's, Lambeth, given in Ferry's "Recollections," shows us a cruciform building with a central pinnacled tower, modelled apparently on the Rood Tower at Lincoln. Internally, a somewhat German aspect is imparted by the lofty pentagonal apse lighted by very attenuated windows. The cathedral at Birmingham is also decidedly German in feeling. Pugin's only churches built in or near London beside St. George's, are St. Thomas of Canterbury, at Fulham, and one of larger dimensions at Woolwich.

* His own church of St. Augustine, Ramsgate, where he was both paymaster and architect, may be taken as a specimen of Pugin's genius when it was unfettered by pecuniary considerations. St. Oswald's, Liverpool, also deserves mention as a good reproduction of a moderately sized 14th century church.

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1848, and was followed shortly after by the graceful churches of Holy Trinity at Brook Green, and Our Lady of Victories, near Clapham Common. Subsequently Wardell built a church at Poplar, and another (St. Mary Star of the Sea), near Greenwich Park. and later still (c. 1856), the large one of SS. Mary and Michael (on the *motif* of a Norfolk example) in the Commercial Road.

For all these Roman Catholic churches, and for the sumptuous one built for the Jesuits in Farm Street, Berkeley Square, by Scoles, Flowing Decorated was the style selected, their architects apparently disdaining either an immature or a declining phase of Pointed, but fixing always upon the fully developed Gothic just as it was at the turning point of its career.

At this time the *Illustrated London News* used to describe all the new churches of more than ordinary interest and importance, the letterpress being frequently accompanied by a well-executed wood engraving of the building in question.

(*To be continued.*)

NOTES ON CURRENT EVENTS.

THE Council of the Royal Institute of Architects of Ireland have passed the following resolution respecting the action of the Belfast Assembly Hall Competition Committee:—"The Council of the Royal Institute of Architects of Ireland having had the result of the Presbyterian Assembly Hall Competition (Belfast) brought before them, are of opinion that the conduct of the Competition Committee in not following the usual and proper course of publishing the report of their assessor (which they understand was an open document), and in appointing as architects to the new building the firm who drew up the original very unsatisfactory conditions, is deserving of their condemnation as being absolutely opposed to the methods which should govern all fair and impartially conducted competitions. The Council consider the proper course for the committee to have adopted was either to have given the work to the gentleman placed first by the assessor, in conjunction with a consulting architect of experience, or else to have invited a fresh competition with more satisfactory conditions than the previous one." The members of the Council present were:—Sir Thomas Drew, R.H.A., President (assessor in the competition); J. Rawson Carroll, F.R.I.B.A.; William M. Mitchell, F.R.I.B.A.; J. J. O'Callaghan, F.R.I.A.I.; Charles Geoghegan, F.R.I.A.I.; R. Caulfield Orpen, F.R.I.A.I.; Charles A. Owen, F.R.I.B A.; G. B. Sheridan, M.R.I.A.I.; and W. Kaye-Parry, F.R.I.B.A. The resolution may be regarded as eminently satisfactory, though it still leaves unexplained the assessor's letter to the committee approving their action. And further, if we mistake not, one of the members of the firm, who are now architects for the work, is a member of the Institute of Architects of Ireland.

THERE is to be no professional assessor appointed in the Bristol Police Court extension competition. Intending competitors will do well to note this fact.

THE competition for the new pier and promenade, with pavilion to accommodate 3,000 persons, at Bridlington, was decided on the 9th inst. at a special meeting of the town council. The council confirmed the property committee's recommendation, the first premium of 35 guineas being awarded to the design marked "Experience," and the second of 15 guineas to that marked "Civil Engineer." The authors of the first-named were Messrs. Magnall and Littlewood, of Manchester, and the author of the second premiated design was Mr. Stow, of Chertsey, formerly surveyor to the Bridlington Urban Council. The estimated cost of the work is £28,000.

THE annual dinner of the Royal Institute of British Architects is this year to be held at Glasgow, on the 3rd of October, and arrangements are being made by the Glasgow Institute of Architects for a three days' visit of the R.I.B.A. members to the city. It is hoped that as many as can make it convenient to journey to Glasgow will do so. There will be one important item in the programme, viz., the Exhibition, and the corporation have announced their intention of entertaining the visitors at a reception the evening after the dinner.

PROFESSOR GEORGE AITCHISON, R.A., commences his course of lectures on Architecture at the Royal Academy, on Monday, the 28th inst. His subject this year is "St. Peter's, Rome."

THE award of prizes and studentships for 1900-1901 will be made known at the R.I.B.A. meeting on Monday evening next, when Mr. J. J. Stevenson, F.S.A., is also to read a paper on "Difficulties and Hindrances in Producing Good Modern Architecture."

AN interesting discussion took place at a meeting of the Architectural Association of Ireland on the 8th inst., on the subject of architectural apprenticeship. Ultimately the meeting resolved:—"That, in the opinion of this meeting, the present system of pupilage concurrent with a compulsory collegiate training and qualifying examination affords the best promise for the architect of the future."

WE regret to hear of the death of Mr. John Burnet, the well-known Glasgow architect, which occurred on Tuesday. Mr. Burnet had reached the advanced age of 87 years. As most of our readers are probably aware, Mr. Burnet was the senior partner of the firm of John Burnet & Son, St. Vincent Street, Glasgow, whose work takes high rank amongst the modern architecture of Scotland. The surviving partner is Mr. Burnet's son, Mr. John James Burnet, A.R.S.A., F.R.I.B.A. The late Mr. Burnet was elected a Fellow of the R.I.B.A. in 1876.

THE Committee on Architecture in connection with the Glasgow International Exhibition desire to present, as far as possible, an exhaustive exhibition of the best works of British architects, and an appeal for assistance towards this end, signed by Messrs. F. H. Newbery (convener), J. J. Burnet, W. Forrest Salmond, and J. Keppie, is to be issued. Each exhibitor's works will be grouped in a court provided for architecture in the Fine Art Galleries.

"THIS Church is Copyright." This announcement is said to be hung up in a church much frequented by amateur photographers, and the verger spends most of his time, when not engaged in delivering archæological dissertations to tourists, in raiding these gentry and forcing them to take heed to the portentous announcement aforementioned. What a pity the restriction does not apply to church restoration or improvement committees!

"CALL a spade a spade," and a chimney something else! A Leeds manufacturing firm, desirous of improving upon the usual type of tall chimney which is so effective an eyesore in the manufacturing districts of Yorkshire, could find nothing better to do than erect a replica of Giotto's campanile at Florence. The idea of such a campanile belching forth black smoke is not only absurd, but strikes an utterly false note as regards purpose in architectural design. The chimney proper in this case is simply masked by a structure that was never designed to act as such. Probably a tall chimney could never be made a pretty feature, which is, perhaps, on the whole, a good thing; but it could at least have some architectural character given to it by a capable architect. And this is about as much as we have any right to expect from a structure whose very purpose is to befoul the atmosphere and spoil the landscape.

THE first municipal crematorium in England has just been opened at Hull, and, according to the Mayor's statement at the opening ceremony, there is no other town in the country where the sanitary advantages of this method of disposing of the dead are more needed. For the cemeteries in Hull have a subsoil of clay which holds the wet in winter, and in the summer cracks so badly as to emit gases which are a distinct danger to the public health. Therefore, urged the mayor, if they could do anything to restrict the usual methods of interment they would be

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doing a real public service. We quite agree. Cremation is the only sanitary way of disposing of decomposing matter and of refuse of all kinds. Therefore we welcome the extended use of crematoria for the destruction of human remains quite as heartily as the development of the refuse destructor system. And the Hull Corporation deserve every credit for having the courage of their opinion, and giving the Hull people the opportunity of disposing of their dead in a rational and more sanitary way. The new crematorium occupies a site adjoining the Hedon Road Cemetery, through which entrance is gained to it. The crematorium is a red brick building of the Early Perpendicular type, and comprises a hall or chapel 24 ft. square, whilst a second contains the incinerating chamber. There is a tower 70 ft. high. The cremating apparatus is a furnace of the regenerative type, designed by the late Mr. Henry Simon, President of the Manchester Crematorium Society. The charge for cremating residents within the city is £1 1s., for other persons £3 3s. These charges include storage of cremated remains for a period of twelve months. The cost of the crematorium has been about £2,500.

THE feeling that architectural effects engender in the minds of those unacquainted professionally with its cause and effect is somewhat curiously illustrated in the case of Carlyle. In Mr. Basil Champney's second volume of "Coventry Patmore" there is a letter from Carlyle to Patmore acknowledging the receipt of his two papers which he thinks should be very welcome indeed to all architects and critics of architecture. He then goes on: "Unhappily I have next to no knowledge of architecture; and in late years (must I blush to own?) absolutely no care whatever about it, except to keep well out of the way of it, and of the twaddle too-commonly uttered upon it!" Following this letter we have the following from Mr. Basil Champneys, who says, "Carlyle's disclaimer of any knowledge of architecture is probably true in a merely technical sense, but he was undoubtedly sensitive to architectural effect, and especially to the moral qualities which it evinced. I remember his speaking to me of Sir Christopher Wren's Chelsea Hospital in some such words as these: 'I had passed it almost daily for many years without thinking much about it, and one day I began to reflect that it had always been a pleasure to me to see it, and I looked at it more attentively, and *saw* that it was quiet and dignified, and the work of a *gentleman*, and I have always thought highly of Sir Christopher Wren since then.'"

A USEFUL series of text-books for architectural students is the "*Builder* Student Series." Recent issues in connection with the series comprise "Structural Iron and Steel," by W. N. Twelvetrees; "Stresses and Strains," by Frederick R. Farrow, F.R.I.B.A.; "Land Surveying and Levelling," by A. T. Walmisley, M.I.C.E., F.S.I.; and "Fieldwork and Instruments," also by A. T. Walmisley. The subject-matter of these little treatises has already appeared for the most part in the columns of our contemporary, but has, of course, been revised and extended in the volumes now published. (London: *Builder* office, or Whittaker & Co, Paternoster Square, E.C.) The authors are all well-known writers and lecturers on the several subjects treated of, and students will find them safe guides. The books are elementary in character, but they will afford to any student a sound foundation if the contents are properly mastered and digested.

"ARCHITECTURAL POTTERY," by Leon Lefévre, with preface by M. J.-C. Formigé, architect to the Government and the City of Paris, has been translated from the French for English readers by K. H. Bird, M.A., and W. Moore Binns. (London: Scott, Greenwood & Co.). It treats of the manufacture of bricks, tiles, terra-cotta ware, stoneware, mosaics, faience, and architectural stoneware, describing the many processes and machines adopted in France. Possibly our English manufacturers may consider they know almost as much as is of practical use to them, but all the same this work cannot fail to be of interest and value to English readers. Even for those who may be familiar with a good deal contained in this work, we are sure there will be found much interesting information.

LOCKWOOD'S Builders' and Contractors' Price Book, 1901 (London: Crosby, Lockwood & Son. Price 4s.), is the first of the builders' price books to make its appearance this year. The work has been very carefully revised, and the prices have been altered and adjusted so as to bring them into harmony with the present state of the markets. The appendices and supplement contain a large amount of very useful general and technical information, including the R.I.B.A. form of building contract; the London Building Act, 1894, and the Amending Act of 1898; the by-laws and regulations now in force under the L.C.C.; and the Regulations as to Procedure before the Tribunal of Appeal, etc.

"AN Architectural Craftsman's Visit to Italy" was the title of a lecture delivered by Professor Gourlay, B.Sc., A.R.I.B.A., before the members of the Glasgow and West of Scotland Technical College Architectural Craftsmen's Society on the 11th inst. The lecturer began by recommending all architectural craftsmen to make at least one visit to the Continent, though for a short time only, to enable them to realise their insular position, and further, as an incentive to reading and study. Beginning with Venetian architecture a bird's-eye view of Venice was shown on the screen, and the many parts of the city and its buildings were pointed out. Thereafter, views of buildings, showing Byzantine, Gothic and Renaissance work in Venice, Ravenna, Verona, Milan and Vicenza were shown. Passing to Tuscany, the Romanesque, Gothic and Renaissance architecture of Florence, Siena, Pisa, Pistoza and Prato were reviewed. Finally, the Ancient, Early Christian and Renaissance architecture of Rome. The lecture was highly appreciated by the very large audience of members, students and friends who assembled to hear it.

THE Public Libraries Committee of the Hampstead Borough Council have had under consideration the question of the provision of a temporary art gallery at the town hall until such time as a permanent art gallery can be erected, and they have decided to recommend the council at its meeting on Thursday night to appoint Sir L. Alma-Tadema, R.A., Mr. G. A. Storey, A.R.A., the Hon. John Collier, Mr. David Murray, A.R.A., and Mr. Basil Bradley, R.W.S., as an advisory committee to assist the Public Libraries Committee in the choice of works of art to be exhibited.

THE Commissioners of Lunacy have had before them the plans of the new Edinburgh lunatic asylum at Bangour, prepared by Mr. Hippolyte J. Blanc. It is understood that on several points they took exception to the plans, particularly in respect to the expense that was proposed to be incurred. In the case of the doctor's house, which was set down at an estimated cost of £7,500, they insisted that a reduction must be made.

THE Abbot Tenaud, vicar of St. Jean d'Angely, claims to have discovered a work by Raphael. It is a painting of the Countess Paleotti, and bears on the back of the inscription "Contessa Elizabetta Paleotti, Bentivoglio," in the supposed handwriting of Raphael. The date is 1506-7.

WHAT is claimed to be the largest warehouse in the world is the mammoth tobacco warehouse at the Stanley Dock, Liverpool. It is 14 storeys high, has a length of 725 ft., a width of 165 ft., a height of 180 ft., a floor capacity of 36 acres—sufficient to store 60,000 hogsheads standing on end. The cost of the warehouse is put at about £300,000.

FOR going up to the top of the spire of Upton Church, Torquay, a steeplejack asked the modest price of £2 10s.! Not many people would care to climb a church steeple for twenty times the amount.

IN further reference to the special "Fire Proofing" section at the Building Trades' Exhibition, which is being organised under the auspices of the British Fire Prevention Committee, the Executive of this body, at a meeting last week, presided over by Mr. Edwin O. Sachs, decided to invite numerous representatives of the municipal, technical, insurance, and industrial interests concerned to

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visit this demonstration of means and ways for reducing the modern fire risk. Among those to whom invitations are being issued are the provincial chairmen of works committees, engineers of the large dock and railway companies, principals and masters of the technical colleges and polytechnics, etc. A sub-committee has been appointed to take charge of matters relating to the section, comprising Mr. F. Hammond (Chairman,) Mr. Max Clarke, Mr. Frederick R. Farrow, Mr. Charles E. Goad, Mr. Ellis Marsland, and Mr. Edwin O. Sachs, with Mr. H. G. Montgomery as business manager.

ENGINEERING AND SANITARY NOTES.

By CHAS. E. GRITTON, A.M.I.C.E.

An Important Engineering Competition.

SOME little time ago a competition was thrown open to the engineering profession throughout the world for a new bridge to connect Sydney with the North Shore, the premiums offered being £1,000 and £500. We learn now that the first premium has been awarded to Mr. E. Cruttwell, engineer, Queen Anne's Gate, Westminster, and the second to Mr. Norman Selfe, of Sydney. The tender accompanying Mr. Cruttwell's design was submitted by Sir William Arrol, and amounted to £2,927,236, whilst that which was sent in by Mr. Selfe was by a German firm, who estimated the cost at £1,280,000.

London Water Supply.

There was an interesting discussion on this important but somewhat stale subject at the Surveyors' Institution on Monday evening last. Various alternative schemes to the present proposals were brought forward at the meeting and discussed, but in the face of the present position of affairs there seems to be little practical use in these discussions, even though the very last word may not yet have been said on the subject.

The Filtration of Water.

Lecturing before the Royal Scottish Society of Arts on Monday evening last at Edinburgh, Professor Chas. Hunter Stewart described the sand filtration system as adopted in the purification of the Edinburgh water supply. He remarked that the great mass of micro-organisms were perfectly harmless, and, indeed, helpful. They were the scavengers of the universe, but unfortunately they were the pathogenic organisms which had to be removed, and that was most conveniently done by filtration. The Talla water was of excellent quality, and when filtered the city would have a supply than which there was nothing finer in Great Britain. In regard to the filters applicable to household use Professor Stewart recommended as efficient the Pasteur-Chamberlain and the Berkfeld patents, both filters giving a sterile water; but as the cylinders fouled the supply failed, and cleansing only restored it for a limited time.

Sydney Sewage Scheme!

The revelations about the manufacture of "table delicacies" in London from putrid meat have been eclipsed in Sydney, thanks to the candour of an enterprising person who recently addressed the following letter to the board which controls the sewerage system of the city:—"I take the liberty to advise you that a gentleman who is here now, and who holds the patent for producing pure alcohol (white spirits) from sewage matter, is prepared to dispose of his rights and illustrate his contention in case it might interest you or your board, with a view of disposing of the sewage matter profitably. In this way the purest spirits can be produced at a nominal cost." It is only fair to add that the matter was *not* taken up, the board's engineer remarking that he would like to see the experiment tried on the patentee!

A Dust Farm for London.

The London Court of Common Council will shortly have under its consideration the proposal of the Streets Committee that the example of Glasgow should be followed in the disposal of dust and refuse. In Glasgow the refuse is utilised for fertilising purposes, the Corporation earning a profit by the working of the farm it owns. The idea of the Streets Committee of the London Common Council is that a farm should be secured in Essex, as near the Thames as possible, to which the dust could be sent in barges for fertilising purposes. There ought not to be much difficulty in securing land for the experiment in Essex.

Steam Turbines.

The wastes of the steam turbine, Professor R. H. Thurston says, are all extra thermo-dynamic; the loss due to the absence of adiabatic recompression excepted. They consist of (1) journal friction, which is made a minimum by the use of a flooded bearing and a light unguent; (2) fluid friction between disc and case, steam, or suspended moisture in the jet, which may be made a minimum by superheating, and between the disc and its enclosing atmosphere of vapour, which may be minimised by the employment of a good condenser; (3) loss of heat and of steam by leakage, which may be reduced to a minimum by durable metal, fine workmanship and close fits; (4) waste by incomplete expansion, which may be reduced to a limit determined by the finance of the case, by the resultant increase of friction and of cost due to the necessary enlargement of the turbine; and, finally (5), thermo-dynamic waste by failure to secure that complete adiabatic recompression of the fluid which is necessary to convert the Rankine-Clausius cycle into that of Carnot. The latter is a peculiarly difficult matter with the steam turbine, since it probably necessarily involves the employment of a separate vapour compression pump of special character, and an amount of added work and cost which may introduce losses more than compensating its gains.

Not only in Germany.

Faulty electric light installations are said to have caused the German fire insurance companies severe losses because of the fires started by this means. Insurance companies are therefore endeavouring to induce the Government to make a law compelling the constant supervision of electric installations for both lighting and power transmission. The matter has become urgent owing to the Strasbourg police authorities issuing an edict forbidding the use of any illuminant other than electric light for buildings of the warehouse class.

Cheap Jointing.

A new material, with which joints, tight against even high-pressure steam, can be made between rough flanges, is now being introduced by Messrs. Poth, Hille & Co., of 27, Leadenhall Street, London, E.C. The material is stated to be capable of resisting the action of acids and oils, and hardens after putting in place. The cost of a packing-ring is said to be only about one-fourth the cost of facing-up a couple of flanges.

A Safe Lift.

Sir F. Bramwell, alluding to a recent lift accident, takes the opportunity of describing a lift which he designed for use in his own house, and which has worked perfectly for the last 10 or 12 years. He writes:—"About 10 or 12 years ago I caused to be designed in this office, and to be executed by different contractors, a small hydraulic lift to carry one person for use in my house in Hyde Park Gate. It was guided up the well-hole of the ordinary staircase without anything surrounding it, and access was obtained by packing a gateway in the hand-rails on each landing and by fitting to each opening a spring gate. The lift itself was fitted with a gate, so that the occupant might not tumble out as he went up from floor to floor. I caused to be arranged (not as any matter of invention, but more as a common precaution) a simple device by which none of the spring gates could be opened unless the lift was opposite to the opening, and I also had another arrangement by which the doors of the lift itself could not be opened unless the lift was opposite to a spring gate. This thing has worked perfectly for the ten or twelve years it has been in existence; I came down by it this morning and I hope to go up by it to-night. It appears to me that if an arrangement of this kind, by which it would be rendered impossible to open any lift door, on any floor, unless the lift were there, were in general use, it would prevent such an accident as that which you recorded."

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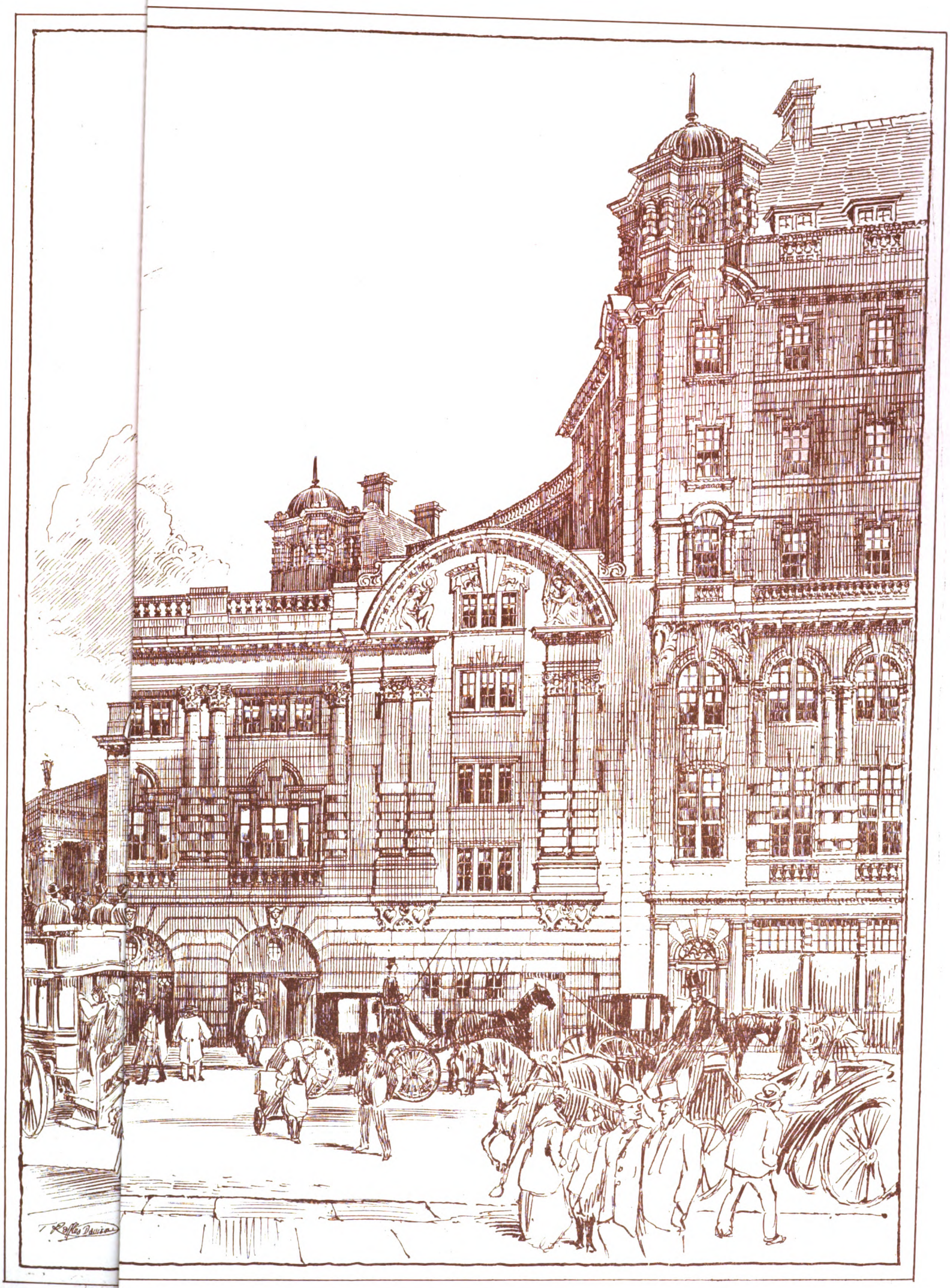

Z, ARCHITECT.
V BUILDINGS.

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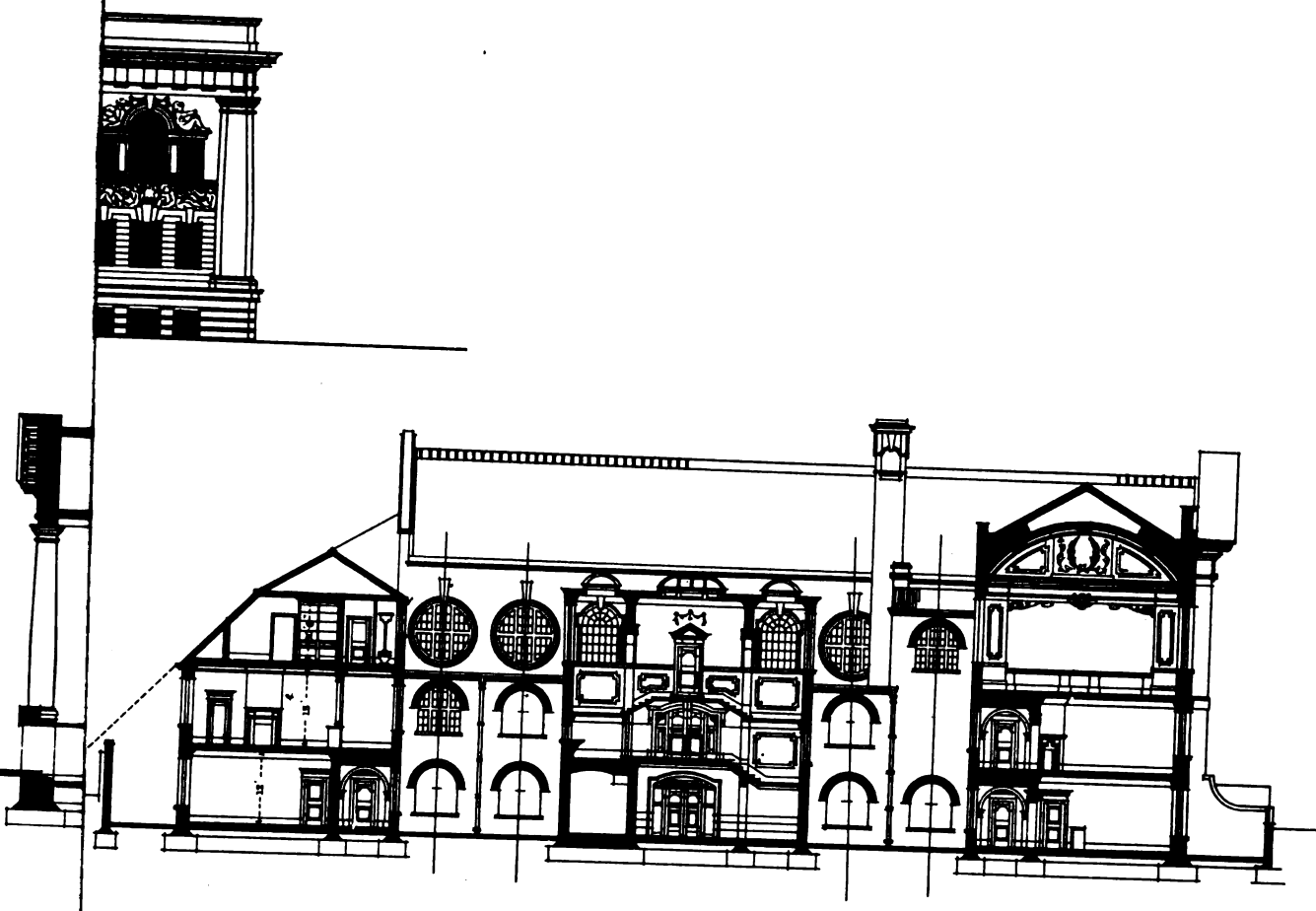
DESIGN By J.W.CROSS F.R.I.B.A.



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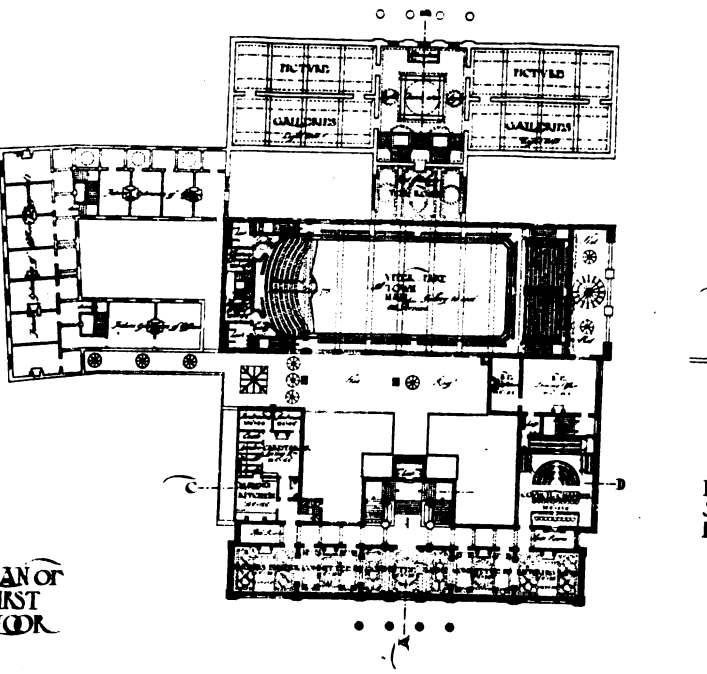

PLAN OF LOWER GROUND FLOOR

PLAN OF FIRST FLOOR

PLAN OF SECOND FLOOR

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OUR ILLUSTRATIONS.

THE NEW GAIETY THEATRE AND "MORNING POST" OFFICES.

ERNEST RUNTZ, ARCHITECT.

WE now illustrate the westernmost portion of Mr. Runtz's design, showing the new Gaiety Theatre, for which he is the appointed architect, and the *Morning Post* offices, which formed part of the design he sent in to the London County Council.

It will be realised from the view that not only has Mr. Runtz imparted much picturesqueness into this part of his scheme, but that there is a prevailing note of some dignity about it as well, and that the whole group of buildings at this end of the site promised very excellent results. It is quite inevitable that a theatre design to fairly express its purpose must consist of a lower and a higher portion, and cannot be a building of even height and proportion. When it comes next to an hotel in which great height is unavoidable, an even dignity and sobriety of line seems impossible and undesirable. Thus in respect to this, and the general commercial necessities of this great street improvement, Mr. Runtz has worked on a safe basis, which will doubtless commend itself to business minds.

The more one studies the history of this County Council scheme for street improvement, and its attempt to import Art at a cheap rate into a business scheme, the more hopelessly ludicrous it appears. It was bad enough to offer small sums of money instead of the chance of appointment as architect by way of a bait to tempt architects of position and ability to submit designs, and to promise no reward beyond. But to influence all the designs to lead up to a great central building, and then the moment all the designs had come in to pass a pronouncement that this great central building was impossible, was to put the final seal of fatuity on the whole affair. This combination of architectural skill has proved the dullest of all our great competitions of recent times, and surely we have a right to complain that this fiasco is largely, if not entirely, to be credited to the respectable gloom cast over all the designs by the suggestion of a great central official building. We must say that Mr. Runtz has escaped from the situation with a lighter heart than the rest, and has determined to give a picturesque result in a way most suited to business purposes. He has even imported a big portico into the centre of his design, which has somewhat of a look of doing County Council duty; but he has not attempted the impossible, and expected hotel, theatre, business premises, and hotel de ville to all run to one dead level of uniformity.

WALSALL MUNICIPAL BUILDINGS.

F. W. CROSS, ARCHITECT.

This design is of more than usual merit, and we think our readers will be glad to have a record of the carefully thought-out scheme.

THE NEW GLASGOW INFIRMARY.

MR. JAS. MILLER, the successful competitor in the recent competition for the reconstruction of Glasgow Infirmary, has received his formal appointment as architect for the work at a commission of 4 per cent. on the estimated cost, viz., £241,000. At a meeting of the Sub-Committee on Plans last week-end Mr. Miller submitted a report upon the way in which he proposed to carry out the reconstruction. From this report we take the following:—

"As requested by the Sub-Committee, I now beg to report first as to the order and method I would recommend for proceeding with the reconstruction of the buildings. In making this recommendation to your committee the chief points I have had in view are these: (1) That a considerable portion of the permanent buildings should be erected and made ready for occupation before any part of the present structure is demolished, and the reconstruction proceeded with in such a manner so that the bed accommodation of the institution will at no time during the reconstruction be less than it is at present; (2) to incur as little inconvenience as possible to the patients and staff, and to cause the least interference with the convenient working of the institution during the whole of the reconstruction; (3) to avoid as much as possible the necessity for temporary buildings. With these points in view I would recommend that the reconstruction be proceeded with in the following manner, namely:—

"1st. To erect the north wing or surgical block on the space between the present north block and the St. Mungo's College. This block is 290 ft. long, and contains thirteen large wards and twelve small wards, and contains in all 224 beds. This block is six storeys high, and contains six complete surgical services, with operating theatres, out-door patients' rooms, day rooms, and surgeons' residences; and the basement contains the Russian and Turkish and other baths, and is in fact a complete infirmary in itself, minus kitchen offices. This block I consider will take about two years to build.

"2nd. When the above block is ready to receive patients those in the present south block will be transferred to that block. The present south block could then be demolished, and the building of what is called the Jubilee block proceeded with. In order to hasten the early completion of the Jubilee block I would suggest that the contracts for same be got out, say, about twelve months previous to the completion of the north block. The work could then be placed in the contractors' hands, all the materials could be prepared and made ready for erecting, so that immediately the north block was ready for occupation the south block could be demolished and the erection of the Jubilee block proceeded with. With the hewn work and all the materials ready I see no reason why this block should not be ready for the roof within eight months from the time it is commenced. The Jubilee block contains 239 beds, which, with the north block, will give a total of 463 beds.

"3rd. On the completion of the Jubilee block the next portion of the building to be erected would be the main central block, which runs north and south, and forms the connecting link between the north and the Jubilee blocks. The erection of this block would complete the whole of the main buildings."

REPORT OF THE JOINT COMMITTEE ON ANCIENT LIGHTS.

THE report of the Joint Committee of the Royal Institute of British Architects and the Surveyors' Institution has been adopted by the council of the Royal Institute, and intimation of such adoption has been conveyed to the council of the Surveyors' Institution:—

Whereas a joint committee, consisting of the undersigned, have held meetings and have carefully considered the subject of the above reference; and whereas such joint committee are of opinion that the law and practice of ancient lights is exceedingly unsatisfactory in several respects and requires amendment in the manner herein suggested, therefore the joint committee recommend that the law and practice in respect of ancient lights be amended as follows, viz.:—

1. The right to ancient lights shall, in all cases where such rights have not been already acquired, be limited to a right to receive light sufficient for all ordinary purposes, but shall not include a right to light of extraordinary amount for special purposes.

2. After the passing of the Act the owner of any tenement not at the time servient to some neighbouring tenement, but over which such neighbouring tenement would in course of time acquire dominant rights, may serve upon the owner of such neighbouring tenement a formal notice, in form and manner prescribed by the Act, and may advertise the same in the daily papers, and register the same at the Land Registry, where one exists, of the district, or, where no such Land Registry exists, at the offices of the County or Municipal Council of the locality. Such notice shall have the same effect as though an interruption had been submitted to for one year, and such notice shall run with the land.

3. The owner of a building which is about to be taken down may cause plans, sections, and elevations to be prepared, and such drawings, if they be attested by the District Surveyor in London, or the County or Borough Surveyor

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elsewhere, shall be accepted as legal evidence. Such drawings shall on demand be certified and registered by the officers above named, who shall be paid fees on a scale appended to the Act.

4. No building erected after the 1st January, 1905, shall acquire any fresh rights of light or air where it abuts on any street, highway, road, court or alley used by the public, or as an access to various tenements, either held in the same ownership or in various ownerships.

5. The owner, lessee, or occupier of any tenement, who considers that his ancient lights will be or have been interfered with by the erection or proposed erection of new premises or alterations to old ones, shall have the right to inspect (or have inspected on his behalf) the drawings which shall be prepared by the building owner of the premises which cause such interference; or if no drawings are in existence, to be informed of the intentions of the building owner, and to take or have taken such particulars from the drawings or information or from the building itself, if erected, as may enable him to ascertain where there is ground for complaint.

6. If such neighbouring owner, lessee, or occupier considers that the lights of his premises will be interfered with, he shall, within seven days from obtaining such information as aforesaid, give notice in writing by registered post of his objection to the building owner, together with the name and address of a surveyor who shall have power to act on his behalf.

7. Within seven days of the receipt of such notice the building owner shall acknowledge the said notice, by registered letter, and inform the person from whom he received notice of objection of the name and address of his surveyor, who shall also have power to act on his (the building owner's) behalf.

8. Such two surveyors so appointed shall, within ten days of the date of the appointment of the last of them, select and appoint an umpire under their hands in writing, such umpire being a member of the Royal Institute of British Architects or of the Surveyors' Institution. The first-named two surveyors shall within the like period meet and discuss the points raised by the owner, lessee or occupier, with a view of settling the same, and failing coming to a settlement they shall refer the matter to the umpire appointed as aforesaid. The said umpire shall view the site and buildings of both plaintiff and defendant, and shall have power to take such evidence upon oath as he may think necessary; and he shall, within 21 days from the date of the matter being placed before him, or within such extended time as he may from time to time determine, issue his award, in which he shall determine either or all of the following points: the right of the building owner to carry out his intended works, the alteration (if any) necessary to be made in carrying out the proposed new buildings or alterations to prevent or lessen the obstructions complained of, and the amount (if any) of compensation of every description to be made to the owner, lessee or occupier, the alterations or improvements to the adjoining premises by light-reflecting surfaces, enlargement of lights, heightening of premises, or other means, the amount of costs to be paid by each or either party, and generally all matters required to arrive at a settlement.

9. In the event of either party neglecting to appoint a surveyor within the time prescribed, or of the unwillingness of the umpire appointed to act, and no other umpire being agreed upon within a further period of ten days, either party shall apply to the president for the time being of the Royal Institute of British Architects, or the President of the Surveyors' Institution, who shall appoint an umpire forthwith, with all the powers as before described.

10. If either party shall be dissatisfied with the decision of the umpire, he may appeal to an Appeal Committee to be formed of nine persons, appointed annually, viz.: three architects to be appointed by the Royal Institute of British Architects, three surveyors to be appointed by the Surveyor's Institution, and three barristers to be appointed by the Home Office. Three members, of whom one shall be an architect, one a surveyor, and one a barrister, shall form a quorum. The decision of this committee, save as hereafter mentioned, shall be final, and they shall have full discretion as to costs. Before giving a decision the members sitting on the case shall personally visit the premises of the plaintiff and defendant, and shall have power to decide whether, and if so to what extent the proposed new building shall be amended, or the dominant premises altered.

11. In the event of either party refusing to accept the decision of the committee in all cases in which a larger sum than £500 is awarded either in money, damages, or works, or in which the interference with the proposed works exceeds £500 in value, he shall have power within one month from the publication of the said decision to bring the matter before the High Court of Justice by a summary process. The Court shall have the full powers set out in clause 8 aforesaid.

12. In any action to restrain building on the ground of its interference with the rights of light, and whether an interim injunction has been obtained or not, either party may apply to the Judge by summons, either to hear the same with an assessor or assessors, or to refer the same to arbitration, in accordance with clauses 8 and 10. If at the hearing of such application or motion for injunction it appears to the Judge that the claim may be satisfied by damages, he may himself refer the case to such arbitration, and if he considers that the action for an injunction has been commenced unreasonably or unnecessarily, may order the party bringing such action to pay the defendant's expenses and costs on such scale as he may deem fit.

And the Joint Committee further recommend that they be empowered to expend the necessary funds in drafting a Public Bill to carry out the above provisions. The Joint Committee also beg leave to submit to the Councils of the Royal Institute of British Architects and the Surveyors' Institution, for their consideration, copies of correspondence that has taken place between the Committee and the Council of the Incorporated Law Society.

(*Signed*)

T. ROGER SMITH (*Chairman*)
EDW. A. GRUNING.
J. DOUGLASS MATHEWS.
J. FLETCHER MOULTON, Q.C.
HERBT. THOS. STEWARD.
ALEX. R. STENNING.
HOWARD CHATFEILD CLARKE.
GEORGE M. FREEMAN, Q.C.
} *Joint Committee.*

W. J. LOCKE, *Secretary.*

December, 1900.

The correspondence referred to comprises two letters—one from the Joint Committee to the Incorporated Law Society, suggesting that they would be pleased to submit to them the result of their deliberations before taking any public action, with a view to co-operating with the Law Society in promoting a Bill in Parliament to secure amendment of the existing law; and another from the Law Society to the Joint Committee stating that they would consider the draft of the proposed Bill when framed, and that they would give it their careful consideration.

THE TRAINING OF AN ARCHITECT.

MR. HUGH STANNUS, F.R.I.B.A., lecturing before the Manchester Society of Architects on the 10th inst., said that, speaking generally, it might be said that beyond what was termed professional practice, which could be learned nowhere else, there was not much opportunity for the higher education in most modern offices. The principal was too much engaged to afford time to be a schoolmaster, and the senior draughtsman had rather to get work out of the pupils than to pump education into them. No system could be exhaustive, and the end of all the education they could give was to enable the student to educate himself.

Should the system be academic or individual? If they could afford one separate teacher to each student then the system might be individual, but in such a case the student lost the advantage of seeing the various solutions of different problems by other minds and the further great advantage of emulation. So far as his experience extended, no student who had any originality in him ever lost it by judicious, systematic training. Hence he

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thought it better to teach according to a well-considered system during the earlier period of pupilage, and to leave the development of individuality to come in the later stage. In other words, he would generalise in the earlier, and specialise in the latter period. It had been objected that the academic teaching reduced all students to one dull level of monotony, and that as a result of this a street in Paris was the same from one end to the other, and was not so interesting as a street in London, where every shopkeeper did what appeared right in his own eyes, seeking only to shout louder than his neighbours. He contested the objections, and contended that the street in Paris was not the same from one end to another. Within the limits which had been fixed for the common good, there was a greater variety of artistic detail than in London, for the Parisian architect, having his mind set free from the lower considerations, could devote himself more fully to what, after all, gave the measure of the artist—the arrangement of the features and the details. Further, the academical method of study would bring to the student's mind the strength and the weakness, the applicability and the inapplicability of the typical treatments that were used in each of the great styles to the different problems of modern building, and when a man had learned what to do without, then he was on the direct road to make his own style by the omission of useless details. And as minds varied, so would the architecture of our streets.

Discussing, in detail, a chart of studies which he had drawn up, Mr. Stannus said he assumed the length of the course at three years, not because it was long enough, but because it was generally all a man could give. The method of study in the old times at Paris used to be to learn (1) all about construction, (2) all about plan, (3) all about elevations, and (4) mix the three. He would prefer to run these concurrently, to emphasise the fact that architecture was one. In the course of further comment he urged that students should look upon planning as a fine art. He assumed in the chart he drew up that a student would be able to attend on the instruction referred to for five hours a day for five days in the week for 40 weeks in the year. The collegiate recognition of architecture was a desirable object, in view of the special circumstances of architectural education. He considered, however, that two points demanded attention—namely, the requirement of attendance on lectures as a condition of granting degrees, and the examinations.

With regard to the attendance at lectures, which was possible in the collegiate life and discipline of the older universities, he reminded them that the modern stressful life of Manchester, with its belt of subsidiary cities, killed the monastic ideal, and left no place for monastic manners. Still, if attendance was required, he would plead that this should not be enforced for a period of three years from the inception of the system. Further, any student who desired to proceed to a degree during this transition period should be admitted to the examination on proper recommendations. A certificate might be granted to any student who had attended the lectures of one particular section, and satisfied the examiner on it, without his being compelled to take the whole course. Thus the system would be made elastic until sufficient experience had been gained. He regarded examinations as necessary at the end of every course, whether long or short. The aim should be to make the education systematic rather than sporadic. While they did not desire to manufacture Admirable Crichtons, they ought to strive to deepen and broaden the education of the architect of the future, so that in his intercourse with his client and the contractor, he should hold aloft the ideal of a cultured, practical, and trusted adviser.

In replying to a vote of thanks and remarks which had been made by members present, Mr. Stannus said he thought they would have to reconsider the question of pupilage. Students would go first for academic instruction for three years, or whatever might be the period, and then architects would find their pupils worth more to them. They might be able to take a pupil without any premium at all. The academic system, in his view, should come first, and then the student could go into an office to learn professional work. He thought they ought to welcome the institution by any college of a course which would tend towards the raising of the professional tone which they all had at heart.

NEW GOTHIC FISH MARKET IN VENICE.

MANY artistic, or rather inartistic, atrocities have been perpetrated in Venice of late years, destroying its fine outlines and detracting from its character, and daily some new project crops up to set trembling its admirers, it apparently being the aim, as a rule, of those in authority to reduce it as speedily as possible to the likeness of a bit of Milan or Turin. During the last few years over a dozen Gothic palaces have been pulled down or transformed. It will, therefore, be a great delight to all lovers of Venice to know that the municipality has unanimously voted the destruction of the horrible, gaunt iron roof under which is held the fish market, and the erection of a beautiful Venetian Gothic building in its place. The hideous iron roof, which, being very high, does not even shelter the stall-keepers, is an eyesore to the Grand Canal. The design of the new Pescheria (fish market) is by Signor Cesare Laurenti, one of the best painters in Venice, and one of the all too rare men who have something to say in their painting, instead of being mere copyists of nature. His plan combines all the most beautiful features of Venetian architecture of the best period—grouped painted Gothic windows, gabled corners, lovely string-courses, a sea-storey, as Ruskin calls it, with its open portico and decorative columns and capitals, graceful balconies and encrusted walls, and a richly-carved outside staircase rising on Gothic arches. Signor Laurenti is able to embody into the new building the fine Gothic hall of the old Quirini Palace, which stands on part of the proposed site, which adjoins the present fish market. He has been helped in the architectural part of his work by Signor Rupolo, the clever young architect who now has charge of the Doge's Palace, and together they have, for some years past, studied the designs of all the newest fish markets in Europe, so as to unite use and adaptability to the purpose for which it is intended with the greatest possible beauty. All the fish market authorities are satisfied as regards the first requirement, and everyone who has seen the exquisite drawings, thought out in every detail, of Signor Laurenti must feel how splendidly he has succeeded as regards the second. The building will make a worthy "pendant" to the celebrated Ca' Doro Palace, which is just opposite, and of which the beauty made the task more difficult. The expense, though large, is not excessive; at any rate, it is a sum Venice can well afford to raise in its midst the most remarkable and beautiful building that has been erected in Italy for centuries.

GREAT DOCK IMPROVEMENTS AT LIVERPOOL.

UNDER the Canada and Huskisson Docks Improvement Acts, 1891 and 1898, the Mersey Docks and Harbour Board are proceeding with gigantic works, which, when completed, will give dock accommodation unequalled in the world, either as regards loading or discharging. The Cunard and White Star Lines have now most excellent quay accommodation, and the use of a very deep dock. The Board are, however, making further preparations for enormous vessels, having constructed at the Sandon Half-tide Dock a 100-ft. entrance, which was opened on the 2nd June last. The Board further intend to make application in the ensuing session of Parliament for the construction of a great branch dock, to be known as Canada Branch Dock No. 2, the depth of which will be 22½ ft. below that of the old dock sill. During the year now closing great improvements have been carried out at Huskisson Dock, and other works of a modern character are in progress. Probably the most gigantic set of warehouses in the United Kingdom, known as the tobacco warehouse, at the Stanley Dock, are almost completed, the first floor being ready for use. These improvements all relate to the North Docks. In the South Docks, also, the Board are carrying vast improvements and new works, especially at the Queen's and Coburg Docks. The new Queen's Branch Dock will have a large portion of quay space available in about three months for the use of steamers, and at the Coburg there are now well-equipped and widened quays for the use of large ocean steamers. Two new entrances, one 100 ft. and the other 80 ft. wide, are being constructed at the Brunswick Dock. They will have a depth of water of 19 ft.

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below the old dock sill. The site has been cleared for some time, and the excavations are giving employment to a large number of men. In Birkenhead the Mersey Board have a big scheme on hand for the construction of river walls or embankments at Tranmere. Application is to be made in the ensuing Session of Parliament for power to extend the walls, to make entrances from or to the Mersey, and to take, impound, and use the waters of the river for any docks, basins, or works.

A MUNICIPAL ELECTRIC TRAMWAY SYSTEM.

AN exceedingly interesting little article on the Glasgow system of electric tramways appears in the January issue of the *Light Railway and Tramway Journal*. It is written by Mr. John Young, the general manager of the system. Mr. Young says :—

"(1) As we have as yet only five miles of double track converted from horse to electric traction as a demonstration of the overhead system, I can only speak regarding the working of these five miles. The first section was opened for electric traction in October, 1898; the second section in January, 1899; and the third section in November, 1899. These routes pass through very populous districts of the city, and a very close service of cars is given. Our experience from the opening day has been that the electric can satisfy every reasonable requirement, and are extremely popular.

"(2) The working of the cars by means of the trolley and overhead wire is all that could be desired. On our present electric line we have adopted the span wire system of overhead construction, with side poles. In one street the span wires are suspended by rosettes attached to the buildings. In two places, where the streets are exceptionally wide, half-a-dozen centre poles have been erected in order to show the effect of the centre-pole construction. For the general system throughout the city the span wire has been adopted, and wherever practicable these are suspended by rosettes attached to the buildings. We have found this method of construction works exceedingly well.

"(3) The Glasgow International Exhibition opens in May 1901, and we expect before that date to have a considerable portion of our whole tramway system converted from horse to electric traction. All the routes for the new system have been fixed, and the Tramways Committee have had the question of rearranging the stages and fares before them, but have meantime delayed consideration of this question.

"(4) There are no motor cars for hire in Glasgow. We have no fear of competition from this source.

"(5) The question of the extension of the tramways beyond the city boundaries has been taken up with much vigour by the Corporation of Glasgow. The Glasgow tramways have never been confined within the city boundaries, as 22 per cent. of the original tramways were constructed beyond the then municipal boundaries. In our Tramways Act of 1899 power was obtained to extend the line to Paisley, a distance of seven miles from the centre of the city; also to Cathcart and Rutherglen. In our bill of this year extensions measuring over 13 miles of double track are scheduled. These include lines to Renfrew, Clydebank, Bishopbriggs, and Cambuslang. All these places are several miles beyond the municipal boundaries. The efforts of the Corporation have been heartily supported by the authorities in these burghs, and also by the County Councils who have jurisdiction over the intervening roads. The arrangement is that the Corporation have the use of the streets and roads in perpetuity, and in return give a good service of cars at the same fares as are charged generally within the city. They also maintain the streets and roads on which the tramways are laid to a distance of 18 in. beyond the outer rails.

"(6) We have a very extensive and complete workshop, where we are building our electric cars. At present we are building at the rate of five per week. We have purchased 80 electric car bodies from English makers, as our requirements for starting next spring are rather beyond the capacity of our works. Of course, we do all repairing work with our own staff.

"(7) We have always provided an ample service of special workmen's cars, from 5 to 7 a.m., and it is the intention of the Corporation to continue this, as required. In the afternoon special workmen's cars are put on several routes, but, in addition, workmen are allowed to travel on the top of the ordinary cars between 5 and 6.15 p.m. at workmen's fares.

"(8) On our electric routes we have adopted fixed stopping places about 200 yards apart. We have found that they work very well. The conductor can devote all his time between stations to collecting his fares. With our system of halfpenny fares we carry a great number of passengers (average of 16 per mile), and it takes the conductor all his time to collect his fares before the car reaches the next halfpenny station. At each stopping place a plate is affixed to the traction pole. Each halfpenny station is denoted by a plate on the poles. The pole is painted red to a height of 10 ft.

"(9) All our motor men and conductors are put through a regular course of instruction. After applicants have satisfied the department as to their general character and intelligence, and have passed the necessary examination by the medical officers as to their physical fitness for this special employment, they receive printed instructions to study, and are put through a regular training school, with an expert as teacher. They receive a course of instruction on a skeleton car, which has been completely equipped for the purpose, and have to undergo an examination in connection therewith. They are, at the same time, also taught the practical work of operating a car on the street by a trained motorman, and when passed by him are finally examined and passed by the chief instructor and traffic superintendent. It is the intention of the department to have all suitable conductors as well as drivers trained as motormen.

TRADE NOTES.

MACKAY'S patent invisible roof ventilators, supplied by Messrs. Cousland & Mackay, ventilating engineers, 150, Hope Street, Glasgow, are being used in the ventilation of St. Stephen's Free Church, Edinburgh, now in the course of erection.

MESSRS. WILLIAM POTTS & SONS, Clock Manufacturers, Leeds and Newcastle-on-Tyne, have just erected a large illuminated turret striking clock, showing the time upon four 6-ft. dials, and striking the hours on a large bell, for the Crompton Co-operative Society, Shaw, Lancashire, to commemorate the Jubilee of the society. Messrs. Potts & Sons are also erecting two new church clocks for the Right Hon. Viscount Downe, Wykeham Abbey, Yorkshire, and a new large illuminated clock with three external dials, for the Leeds Corporation; at the new free library and police station, Woodhouse Moor, Leeds.

THE Local Government Board have sanctioned the proposal of the Whitby Rural District Council to borrow £4,625 for the provision of a water supply for Fylingdales.

THE total expenditure by the West Riding County Council upon main roads during the last official year was no less than £151,477. This works out at an average cost per mile of £133, 13s. 11d., as against £144 2s. 6d. per mile for the previous year.

THE Rev. Harry Drew, vicar of Buckley, Flintshire, Mr. Gladstone's son-in-law, has announced his intention of restoring the church tower, which is in an unsafe condition, and also of presenting a light peal of bells to the church. Mrs. Drew will bear a portion of the cost of both objects.

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The British Architect.

LONDON: FRIDAY, JANUARY 25, 1901.

THE END OF THE VICTORIAN ERA.

THE Queen is dead, and the Victorian era is ended, but the lustre of both will live for ever in the annals of English history. The memorials of each have shadows, broad and deep, cast over their fair horizon, but these only serve to increase the brightness of their immortal fame. Through all the turmoil of political unrest, through all the horrors of war and pestilence, through every form of national calamity and disturbance, the Queen has demeaned herself not merely as the Sovereign of a great and powerful nation, but also as the faithful friend and mother of her people. She has suffered the most poignant personal sorrow with a noble, steadfast front, and has ever been ready with her kindly sympathy for those similarly afflicted. Thus will she be credited in the history of her times, not only as having had a long and glorious reign, but with having won in fullest measure the love and respectful admiration of all her subjects, at home and abroad, than which she could surely desire no greater honour, or brighter fame.

The Victorian era, despite ever and anon the dark clouds of national calamity, is a marvellous record of progress and prosperity. The political and commercial results it is not within our province to discuss. But so far as regards the art of architecture, the science of building, and the public health are concerned, we may at least assert, without fear of contradiction, that the Victorian era has been marked by a steady and constant forward movement. In regard to construction and sanitation, the latter part of the Queen's reign has been fruitful in development and progress. Even in the matter of craftsmanship we have begun to show signs of real revival, whilst the question of architectural education is no longer either a dead letter, or a merely problematical consideration.

Architecture, it is true, has been something like a rudderless ship, sometimes driven out of its course by the gusty winds of a passing fashion in style, and ever and anon tossed to and fro in the great waters of modern commercialism and competition. But all art possesses a true compass, and, in spite of every adverse circumstance, must win its goal. So we find in much of the architecture of to-day a robustness and originality, which, if not actually indicating a new national style, bids us hope much from the future. The architectural sins of the Victorian era have been many, but the legacy of the Gothic revival would of itself cover a multitude of sins. It may be, as Professor Beresford Pite remarked the other day, that "We pursue no definite ideal now, but wander aimlessly among the enchantments of quaintness, originality, and unrestrained, though demoralising, freedom of design." Yet we would fain believe we are discovering the deeper meaning of art in design, and shall ultimately find we have not "wandered aimlessly" in vain.

But however we might seek to analyse the results of the Victorian era, we could only arrive at one and the same conclusion, viz., that it has been the most progressive and prosperous of any period in English history. And though it has closed under the shadow of war, and the rumour of other impending disasters, yet we must not forget the mighty tide of great reforms, political and social, which has swept away abuses and evils of many kinds, and given us, on the whole, a cleaner and stronger national life. That there are still mighty forces for evil in our midst goes without saying. There is, too, much in the commercial and industrial outlook which gives cause for serious reflection, and even, at times, for a grave mistrust of the present trend of affairs. But we still have faith sufficient in the strength and purpose of English character to believe that in the future, as in the past, evil will be overcome with good, and that the righteousness which exalteth a nation shall again prevail.

NOTES ON CURRENT EVENTS.

THERE was the usual large influx of students at the Institute meeting on Monday evening, when the awards in connection with the R.I.B A. students' competitions were announced, and there was the usual exodus as soon as the announcement had been made. Generally speaking, the awards are satisfactory. That the Soane Medallion was withheld could hardly be a matter for surprise, and we think the Council acted generously in giving 30 guineas each to "Ars" (Matthew Jas. Dawson, 37, Ossington Street, Bayswater, W.); "Ionic" (Jas. B. Fulton, 10, Rothwell Street, N.W.); and "Hiawatha" (H. Munro Cautley, The Rectory, Westerfield, Ipswich). The subject was an excellent one, and it is somewhat strange that the competitors did not grasp it more satisfactorily all round. The Measured Drawings Prize deservedly falls to the author of "Stafford Knot" (Lawrence L. Bright, 3, Villa Road, Nottingham), for his excellent drawings of Kirby Hall. The authors of "Archer" (Wyatt Papworth, 10, Park Place Villas, Maida Hill, W.), and device of a "Cannon" (Hy. Francis Traylen, 15, Broad Street, Stamford), each receive medals of merit and five guineas. The Pugin Studentship is won by Mr. Hy. W. Cotman (133, Anesbury Avenue, Streatham Hill, S.W.), whilst Mr. J. Forbes Smith (3, Hope Park Terrace, Edinburgh), is awarded a Medal of Merit, and Hon. Mention is made of the work of Mr. A. J. Pitcher (Sebright Avenue, London Road, Worcester). The Grissell Gold Medal is quite rightly given to Edwin Forbes (17, Buckingham Street, Strand), for his admirable set of designs under the motto "Pons Asinorum." The Tite Prize is awarded to "Corona" (William Fairbairn, 9, Spence Street, Edinburgh), whilst 10 guineas is given to "S. George" (Ralph Knott, 66, Oakley Street, Chelsea), and "Marble Arch" (W. A. Mellon) receives Hon. Mention. The Essay Prize falls to Mr. Arthur Maryon Watson (9, Nottingham Place, W.), and a Certificate of Merit is accorded to Mr. W. Curtis Green (63, Bedford Gardens, Campden Hill, W.) The Owen Jones Studentship is secured by Mr. Hervey Rutherford (7, Dalrymple Crescent, Edinburgh), Medals of Merit being given to Messrs. Percy E. Nobbs (49, Queen Street, Edinburgh), and Ramsay Traquair (8, Dean Park Crescent, Edinburgh), and a Certificate of Merit to Mr. E. Bennett (18, Rue Bonaparte, Paris). The Godwin Bursary, for which there was only one applicant, was not awarded.

THE ASHPITEL PRIZE for 1900, awarded to the candidate who has most highly distinguished himself among the candidates in the final examinations of the year goes to Mr. Shirley Harrison, of Leicester. The Council have further awarded extra prizes of five guineas each to Mr. C. H. F. Comyn and Mr. C. E. Varndell, who passed the final examination in June 1900. The Council have approved the drawings and design executed by Mr. John Stewart, who was awarded the Owen Jones Studentship for 1899, and who travelled in Italy, Greece, and Spain. Also the work of Mr. James McLachlan, who was awarded the Pugin Studentship for 1900, and who travelled in Norfolk, Lincolnshire, Northamptonshire, and Warwickshire. Likewise the work of Mr. Percy Erskine Nobbs, who was awarded the Tite Prize for 1900, and who travelled in Italy.

PRIOR to the announcement of the awards, the hon. secretary, Mr. Alex. Graham, announced the death of Mr. J. J. Burnet, of Glasgow, *Fellow*, to which we alluded last week, and a vote of condolence with the widow was duly passed. Mr. Graham made an appropriate reference to Mr. Burnet, junior, who survives his father, and has already served on the Institute Council, and "who we hope," added Mr. Graham, "will do so again." There was not a very large attendance of members left, after the exodus of students, to listen to Mr. Stevenson's paper, which dealt with some of the more important practical difficulties and hindrances met with by modern architects in their endeavours to produce good architecture.

BY the terms of his will the late Mr. J. J. Burnet, architect, Glasgow, leaves amongst other legacies, payable on the death of his wife, £100 to the Glasgow Institute of Architects.

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THE architects of Belfast have decided to form an architectural association in their city, "to consist of Fellows and Associates of the Royal Institute of British Architects and members of the Royal Institute of Architects of Ireland, together with such other competent members of the profession as may desire admission, and be elected subsequently under a constitution and bye-laws which shall be framed by a council elected for that purpose and approved by a majority of the members." This appears to be a step in the right direction, seeing that the architectural profession of Ulster is practically without any organisation at all, and therefore but little unanimity of practice. The meeting held at Belfast on the 15th inst., to consider and decide the question, elected the following provisional committee to prepare a scheme and report to a further general meeting:—Vincent Craig, F.R.I.B.A.; J. J. McDonnell, J.P., M.R.I.A.I.; Frederick H. Tulloch, A.R.I.B.A.; William J. Gilliland, M.R.I.A.I.; John C. Dewhurst, M.R.I.A.I.; Nicholas Fitzsimons, A.R.I.B.A., secretary and convener.

THE meeting, which was presided over by Sir Thomas Drew, R.H.A., of Dublin, President of the Royal Institute of Architects of Ireland, after transacting the main business for which they had come together, passed a resolution approving the resolution passed by the Institute of Architects of Ireland in respect to the Belfast Assembly Hall competition, and which has already been published in our columns. Sir Thomas Drew in putting the resolution to the meeting, remarked that the conditions of the competition were impossible, unsatisfactory, and distasteful, as were so many of the competitions in Belfast. There had been many unsatisfactory competitions in Belfast, but this last one was surely the last straw which broke the camel's back. Let us hope this is so, and that the profession will be more alive to their own interests the next time a competition is instituted in Belfast. Perhaps by that time the new association will have been properly organised, and be able to render some useful account of itself.

AT a meeting of the Baths Committee of the Leeds Corporation on Tuesday a rough estimate was submitted of the cost of erecting a building to serve for baths and library in York Road, and for new bath premises in Broad Lane, Bramley. Sites have been already purchased, and exclusive of this outlay the cost will be, in York Road, about £15,000, and at Bramley about £8,000, If the City Council sanction these proposals, as the committee recommend, competitive designs will be invited, with an offer of premiums of £50, £30, and £15 in the former case, and £30, £20, and £10 in the latter.

THE receiving days for works intended for the annual exhibition of the Royal Academy are: For water colours, miniatures, black-and-white drawings, engravings, etchings, architectural drawings, and all other works under glass, Friday, March 29th. For oil paintings, Saturday March 30th, and Monday, April 1st. For sculpture, Tuesday, April 2nd.

AMONGST the pictures of old masters disposed of at Christie's on Saturday last was a landscape by Isaac Ostade, dated 1649, which realised 950 guineas. At the Knighton sale this picture fetched only 125 guineas. An interior by an artist of the Dutch school was knocked down for 580 guineas.

ARNOLD BÖCKLIN, the famous Swiss painter, whose death is announced, was born at Bâle in 1827. He studied in Dusseldorf, Antwerp, Brussels and Paris. In 1850 he went to Rome, where he lived for six years. He left Italy in 1856 to seek patrons, and was well received at Munich. In 1860, through the influence of Lenbach, Begas and other artists, he was appointed a professor at the Weimar Academy. But he resigned the post in 1862, in order to be able to return to Italy, and he finally settled down at Florence, where he died. An artist of remarkable power and considerable originality, Böcklin essayed many varied branches of art—portraiture, landscape, symbolical figure-painting, and fresco. Böcklin's work was little known in England, but it has excited much enthusiasm in the German-speaking countries.

THAT fine example of Elizabethan work, Cobham Hall, Kent, belonging to the Earl of Darnley, is to be let furnished, together with the estate of 8,000 acres. The hall which stands in a deer park some seven miles in circumference, has been favoured with visits by Queen Victoria, who stayed here with the Duchess of Kent; by Charles I., who slept there with his bride; and by Queen Elizabeth, who was entertained here by William Brooke, Lord Cobham, and after whom a room is named.

THE Improvement Committee of the Manchester City Council received a deputation on Tuesday from the Hanging Bridge Preservation Committee. The purpose for which the Preservation Committee was called into existence was to keep for Manchester the ancient and interesting structure, a historic part of the old town, which by the clearances of property in close proximity to the Cathedral has been unearthed in recent years. The Hanging Bridge, under which ran a stream diverted from the Irk to the Irwell, was the approach in old days to the very heart of Manchester. It was at once a passage way and a protection. The Preservation Committee have made an earnest appeal to the Corporation that the bridge may not be disturbed, but that it shall remain as the feature of an open space in the centre of the city. The Improvement Committee have not been willing to engage in the great expense which would be involved in keeping the space, highly valuable for building purposes, free and open. The deputation, which consisted of Sir William Bailey, Mr. R. Falkner, Mr. A. Derbyshire, and Mr. Phelps, presented a sketch plan of a building which, if carried out, will combine the preservation of the bridge with the utilisation of the site for business purposes. The design shows an old-fashioned building something after the style of The Row, at Chester. The ground floor would give free access to the bridge, and the basement would be used as a café, while the upper part would be devoted to business purposes. The Improvement Committee promised to give their consideration to the new proposal, and to inform the deputation of their decision.

THE British Archæological Association is to visit Newcastle-on-Tyne this year for their annual congress. At a meeting of the Association, held on the 16th inst., the Rev. H. J. D. Askey, honorary editorial secretary, read some notes, contributed by Mr. L. D. Jones, of Bangor, upon "Yo Eglwys Wen" (the white church) as remains of marble walling, blocks of quarry, and slabs of rough stone are locally called. These remains are situated between seven and eight miles from Bala, and form a rectangular level space of 45 ft. by 15 ft. Mr. Jones submitted carefully-drawn plans and maps of the locality to illustrate his notes, and also sent some fragments of pottery charcoal, and contents of an earthen vessel, which were discovered in the centre of the area about 12 ins. beneath the surface. It is proposed to undertake a thoroughly systematic exploration of the site later on, in order to determine, if possible, the nature of buildings, which seemingly originally existed on this spot. An interesting paper was also read by Mr. Patrick, contributed by Dr. Fryer, upon "Norman Fonts in N.E. Cornwall." These fonts form a group of nine in the parishes of Altarnon, Collington, Jacobstow, Landrake, Lancott, Launceston, Lazart, Lavhitton, and Warbstow. They are all of Transitional Norman period, and very much resemble one another both in design and workmanship, and are particularly interesting as affording further evidence of the existence of a lord or a school, or, perhaps, a guild of carriers and waggons.

A LECTURE on "The Housing of the Working Classes" was delivered before the members of the Sheffield Society of Architects and Surveyors, the other evening by Mr. H. Potter, A.R.I.B.A. Mr. Potter confined his observations to the building of small houses in terraces or blocks to accommodate at the most two families in each house. In regard to the important question of laying out estates, he suggested that instead of large owners and public bodies cutting up the land at the rear of the houses into small strips for so-called gardens, each house might have a small yard, and the remaining land be kept as one large open space for the benefit of all the adjoining houses. With sites 70 or 80 ft. deep a space 40 to 60 ft.

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wide could be obtained extending the entire length of the houses, which would form an excellent playground for the children, would facilitate the drainage, give good access to the rear of the premises for the delivery of fuel and collection of refuse, and save the loss of frontage caused by providing for this in the ordinary way. Mr. Potter afterwards referred to a series of plans he exhibited in the room, illustrating houses occupying frontages of from 12 to 18 ft., beginning with four-roomed cottages for one family, and gradually increasing in size up to six and seven rooms. Also plans for double tenements, consisting of ground and first floors arranged in "flats," each having a separate front entrance, and being self-contained in every respect.

YORKSHIRE master builders (the Yorkshire Federation of Building Trade Employers) dined together at Leeds on the 17th inst., under the presidency of Mr. James Longden, of Sheffield. Before the dinner the annual business meeting of the Federation took place. A satisfactory report and balance-sheet were presented and adopted. Mr. James Longden was elected president, and Mr. G. H. Walters (Hull) and Councillor Mansfield (York) were appointed vice-presidents.

AN Irish landowner returning from South Africa after a year's absence with the Yeomanry, was, according to the *Outlook*, making a tour of inspection round his estate accompanied by his steward. "Do you mean to say those houses aren't finished yet?" he exclaimed angrily, surveying a row of half-built labourers cottages. "Well, yer honour," remarked the steward triumphantly, anxious to show that something had been accomplished, "the conthract was finished last week, but not the houses."

AN amusing story is told of a baker in a town near Edinburgh. Previous to the New Year, and to meet the exigencies of business, he required to have the "soles" of his oven renewed, and placed the order in the hands of a local builder. One day the builder happened to be working a certain churchyard removing some old tombstones. Thinking that some of the old stones would suit the purpose of the baker, he had them conveyed to the bakehouse and put in in place of those removed from the oven. The baker was quite satisfied with the job. About the New Year time he happened to be making some pretty large cakes for the festive season, and on drawing one of these from the oven he was thunderstruck to find impressed on the bottom of the cake the words "Sacred to the memory of." He drew a second cake, and found it to bear the words "Deeply regretted." He at once complained to the builder, when satisfactory explanations were forthcoming, and matters were rectified by having the stones turned on the other side.

THE connection between beer and the Bible would seem to be more real than perhaps some of us could have imagined. According to a writer in the *Daily Chronicle*, quite a goodly number of inn signs in London have a biblical reference. For instance, there are seven Adam and Eves in London, and five Noah's Arks, and, of course, connected with that, five Olive Branches. There are two Jacob's Wells, and one Job's Castle, and one Samson's Castle. Strangest of all, but not the least appropriate, is Simon the Tanner, in Long Lane, Bermondsey, the seat of the tanning industry in South London. And finally, we have the Two Spies, in Catherine Street, which is about to be pulled down, and which has reference to the spies sent to take stock of the Promised Land.

THE death is announced of Dr. Sedgwick Saunders, medical officer of health for the city of London, to which post he was appointed in 1874. Dr. Saunders who died on Friday last, was born in 1824, and was a distinguished student of St. Thomas's Hospital. He then became an army surgeon, afterwards resigning his appointment, and beginning a private practice in the City. Amongst a number of publications upon sanitary topics which he wrote, were:—"Reports on the General Sanitary Condition of the City of London: Constant Water Service, Slaughterhouses, etc."; "On Some Chemical Analyses of the Waters from the Surface Wells in London"; "The Artizans' Dwellings Act"; "On the Insanitary State of St. Bartholomew's Hospital"; "Special Report upon the Insanitary Condition of Christ's Hospital"; and "The Action of Water on Lead Pipes."

THE proposed street improvement scheme, to be carried out by the London Corporation on their "John Carpenter" estate, near Tottenham Court Road, has now been fully decided upon. The principal change will be the demolition of the North and South Crescents, which, with Alfred Place, were designed by George Dance, R.A., during the years 1790 to 1814, while serving as Clerk of the Works to the Corporation. Alfred place itself is not to be demolished, but will be extended north and south. The leases fall in on Lady Day next year.

NOTES FROM BOSTON, U.S.A.

By R. BROWN.

BOSTON SOCIETY OF ARCHITECTS.

THE January meeting of the Boston Society of Architects, being the annual meeting, brought a larger attendance than usual. Mr. Chas. Cummings was re-elected president, and Mr. E. J. Lewis secretary. Lengthy reports were handed in by the chairmen of the various committees, and the treasurer's report showed a good balance in the treasury. Later in the evening Mr. R. Brown read a paper on "English Half-timbered Work," which was fully illustrated by drawings and photographs.

A message was sent to Mr. Edward C. Cabot, the venerable honorary president of the society, whose illness had been reported. The day following the meeting, Mr. Cabot's death was announced. Many members of the society were present at his funeral. Mr. Cabot, who had been president from the founding of the society, was a man universally loved, and esteemed. His chief works in Boston are the Boston Theatre, one of the largest in the country, and the Athenæum Building. He took a wide interest in the fine arts generally, and was a water colour painter of no ordinary ability. For many years he had lived at his home in Brookline, retired from the profession.

F. C. WITHERS, ARCHITECT.

Mr. Frederick Clarke Withers, the architect, died yesterday (January 7th) at his home in Yonkers, New York. He was born in England in 1828. He received an academic education and studied architecture eight years. He then came to the United States. He was the architect of Jefferson Market Court House and Prison, City Prison, Astor Memorial Reredos, Trinity Church, New York; Trinity Church, Hartford; Zabriskie Memorial Church, Newport, R. I.; Hudson River State Hospital for the Insane at Poughkeepsie; Deaf Mute College at Washington, D. C., etc. He was lieutenant of engineers, United States Volunteers, during the Civil War. He was a member of the Century Club, and was the author of "Withers's Church Architecture."

AMERICAN ARCHITECTS FOR HONOLULU.

A number of American architects have gone to Honolulu among the number from Boston being Mr. Edward A. P. Newcomb, who intends remaining there two years. The Americans going to Honolulu expect to prepare plans for many business blocks to be erected upon the sites of Government and other buildings destroyed about a year ago on account of the bubonic plague. Several sections of the city were wiped out by fire started by the Board of Health to destroy plague-infected buildings. Much property in the city is owned by Americans, and they are active in constructing substantial buildings in place of those destroyed.

ARTS AND CRAFTS SOCIETY.

At a recent meeting of the Arts and Crafts Society Mr. C. R. Ashbee, of London, addressed the members and their friends about the work of the Guild of Handicraft at Essex House. Using stereopticon, the lecturer took the teachings of Ruskin as his text, and shared some of the difficulties encountered in attempting to put those teachings into execution. Among other things he said that the trade union and co-operative movements were indifferent to æsthetic training.

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BOSTON ART STUDENTS' ASSOCIATION.

The Boston Art Students' Association is to be known henceforth as "The Copley Society of Boston." Under the old name the association was to hold Twelfth Night Revels in Allston Hall.

SOME ART EXHIBITIONS.

The New Gallery Art Exhibition was not a great success financially. Only five pictures were sold, one of which was by a Japanese artist, bringing in a total it is said of about 600 dollars.

The Japanese water-colour exhibition in the galleries of the Boston Art Club was a great success in point of attendance and sales. On one day there were eleven hundred visitors present, and the total sales amounted to over 4,000 dollars.

The annual oil-colour exhibition of the Boston Art Club has just been opened. About 75 per cent. of the pictures sent in were rejected, and the result is a small but unusually high-class exhibition. About 30 of our local artists are represented, and 36 of New York and elsewhere find place on the walls. The club hope for good results from this exhibition.

CHICKERING HALL.

The building known as Chickering Hall, by Messrs. Peabody & Stearns, which is Italian in style, is rapidly approaching completion. Messrs. Chickering & Son offer a prize of 500 dollars for the best design for the cover of the "Chickering Hall Programme." This liberal sum should induce many artists to send in designs. Messrs. F. W. Benson, Dwight Blaney, and Robert S. Peabody are the judges. The 15th is the day for receiving them.

A PROBABLE MUSEUM OF ART FOR BOSTON.

Mrs. John L. Gardner's so-called imported Venetian Palace in the Back Bay Fen district, together with the art treasures which she has been collecting to put into it, will, it is said, become eventually a free museum of art for the public of Boston. The collection comprises two famous Titians, one of which was executed for the King of Spain. There are also works by Rembrandt, Velasquez, and Raphael.

OUR ILLUSTRATIONS.

AT MESSRS. NEATBY, EVANS & CO.'S.

ARTISTIC craftsmanship, which is not limited to one particular material or trade, but needs several for its full expression, is the pursuit of Messrs. Neatby, Evans and Co. Mr. W. J. Neatby should be well known to the readers of the *British Architect* for the admirable design he has done in terra cotta ornament and sculpture for the great Doulton firm. But admirable as this was, it was far from satisfying his artistic energies. His developments of tile faïence productions, his fine colour schemes, his varied methods of permanent wall decoration, his metal-work, his glazing, and also his furniture designs, have proved his possession of wide artistic sympathies, and singular capacity for fresh and admirable developments, both in design and manufacture. The real place for such a talent would almost appear to be within the ranks of architects, as in a few other cases we might name; but, after all, there is so much to be done in the way of artistic craftsmanship, without really trenching on the larger aims and more serious difficulties of architecture proper, that we, perhaps, should be well content to have such artists as Mr. Neatby working exclusively in the arts accessory to architecture. One thing is quite certain, that, whether architects like it or not, they cannot restrict the field of artistic endeavour entirely to the jurisdiction of the architect. There are so many openings for such effort where the architect does not manage to secure an *entree* that the many-sided talent of the decorative artist is welcome enough. That he is impelled to amalgamate his work with a firm, and to mix business with pleasure as it were, seems to be unavoidable, and it may be that the best thing architects can do is to co-operate with the system as far as possible. The fact remains that in such showrooms as Messrs. Neatby & Co. are able to set up, one's sympathies are irresistably drawn to the many dainty and charming developments of glass, metal, faïence, sculpture, enamelling, and the like, and those who desire the development of art must wish them a successful career. The things at Messrs. Neatby's must be seen to be fully appreciated, but I have been tempted to suggest some phases of their beautiful work. The entrance is transformed from the usual dull aspect of an ordinary London house by a charming little bit of glazing above the door, some dainty stencil work on the walls, and fine pieces of furniture. The suggestion of landscape in the window is charmingly done, for the brief summary of the lead lines is helped out by the clever arrangement of appropriate textures in the pieces of glass. Some characteristic examples of metal-work in the form of candle sconce and finger plate, and a hinge to the coal box are also shown, but other good things I am obliged to reserve for a future number.

T. RAFFLES DAVISON.

ROYAL ACADEMY ARCHITECTURAL SCHOOL—A STREET FRONT DETAILS.

BY A. E. CORBETT.

WE complete the illustration of this design by the excellent sheet of details.

PUBLIC BUILDINGS, NEWPORT, ISLE-OF-WIGHT.

E. STONE COLLINS AND RALPH KNOTT, ARCHITECTS.

This was one of the best designs received in the recent competition. The character of the design was well expressed in admirable drawings.

HINDRANCES TO THE PRODUCTION OF GOOD MODERN ARCHITECTURE.

MR. J. J. STEVENSON read a paper on this subject at Monday evening's meeting of the Royal Institute of British Architects.

At the outset Mr. Stevenson said that the difficulties besetting modern architects were due to the conditions of modern life as compared with those of former times. The hindrances were the laws and regulations which restrict practice and the natural development of building. Traditional architecture did not cease with the new life of the Renaissance, and though the mediæval styles lived on, the new architecture soon became a custom and tradition which every workman knew and could carry out without drawings from an architect. It is only in the last two or three generations that architecture has emancipated itself from tradition; that builders and architects, instead of conforming to established custom, have followed their own fancies and have done what was right in their own eyes, every man being a law to himself. Instead of the few whose force of genius broke through tradition and made an advance in the style, each architect and builder now thinks he must be original, and as original genius is scarce, so are good buildings. The best hope for new architecture is a thorough knowledge of the old, not a superficial acquaintance with many different styles. The style must be assimilated so that the architect can think in it and use it as he does in his native tongue.

It might be thought that competitions, with an architect of standing as assessor or as judge, would secure good architecture by criticism and selection of the best designs. But the result has not justified the hope, and there is now a tendency to abandon the system. In a competition the architect works in the dark; he has to guess what is wanted, and no information the assessor can give in his instructions to competitors can adequately supply it. Architects whose local standing might have entitled them to be appointed for the work, who possibly know more of the conditions and requirements than the assessor, hesitate to be judged by their drawings alone in competition with some young unknown architect from a distance who, if he is successful, has no character to maintain in the district. Sometimes the assessor is one whom architects may fairly decline to be judged by. They may know that he does not understand their art, and his instructions may show that he is ignorant of the requirements. In these he takes a power of decision more absolute than judges in law cases ever claim; they decide only after hearing both sides of the case, and they give reasons for their judgment. But the assessor hears no pleadings and gives no reasons for his judgment. Might not his proceedings be in some

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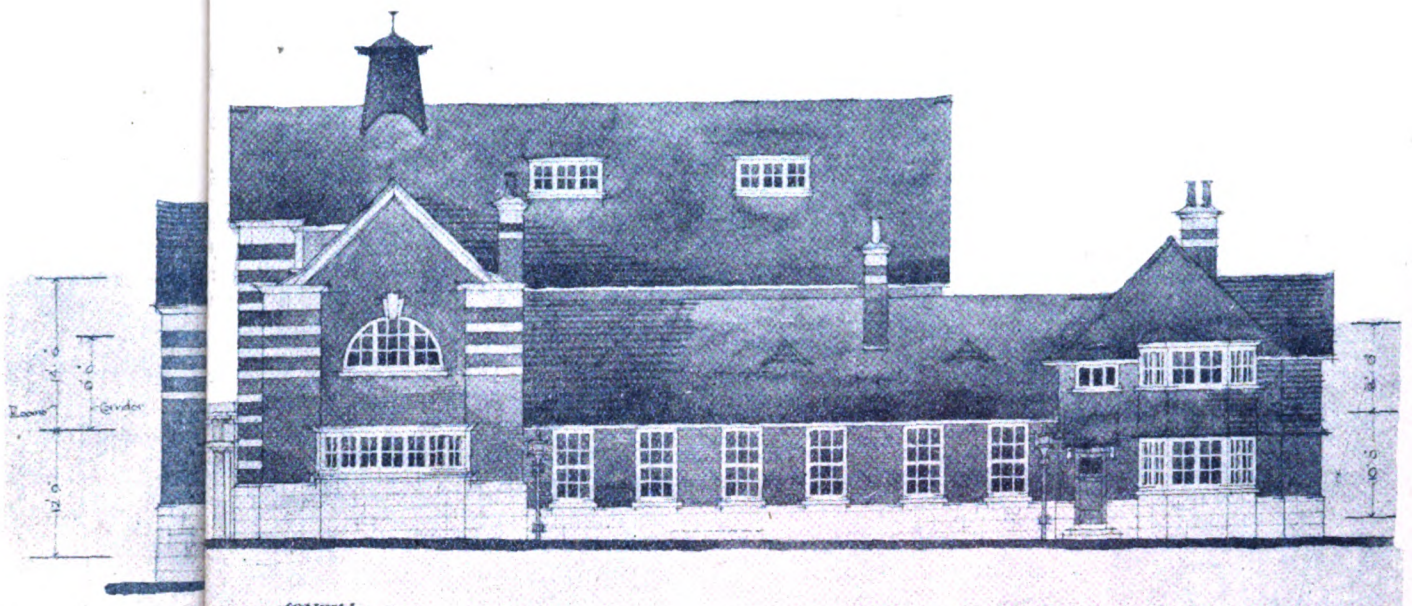

SOUTH
ELEVATION

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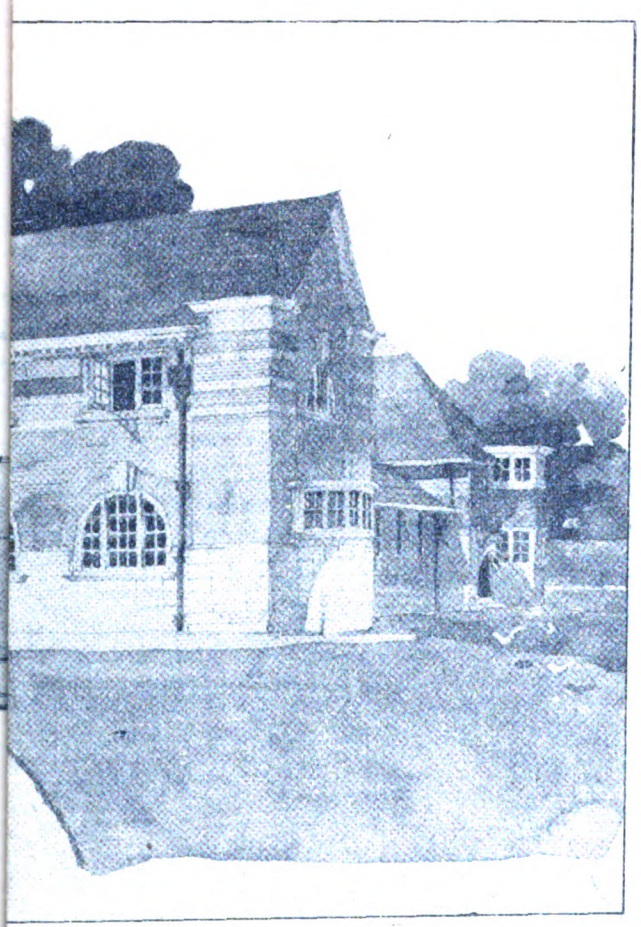

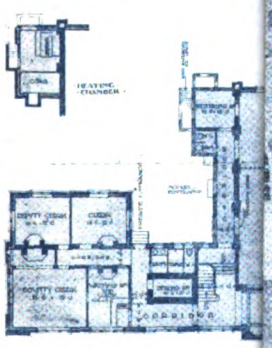

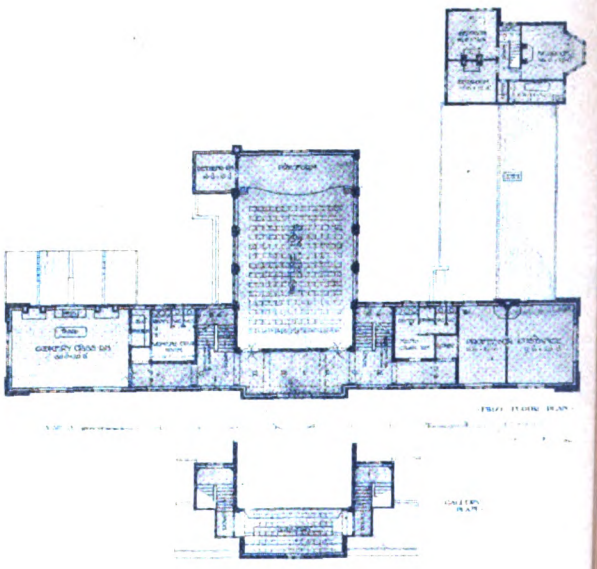

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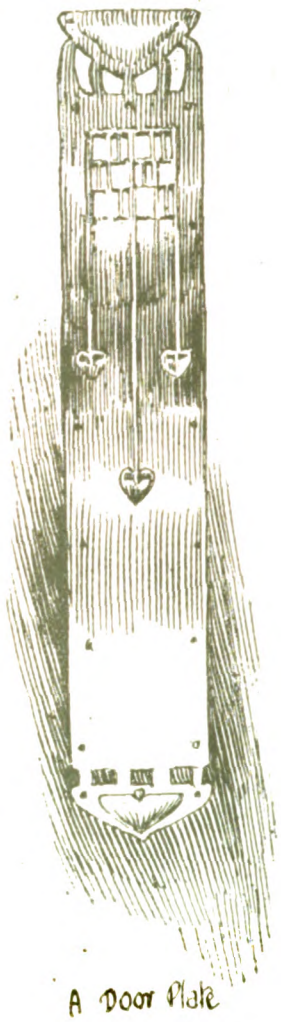
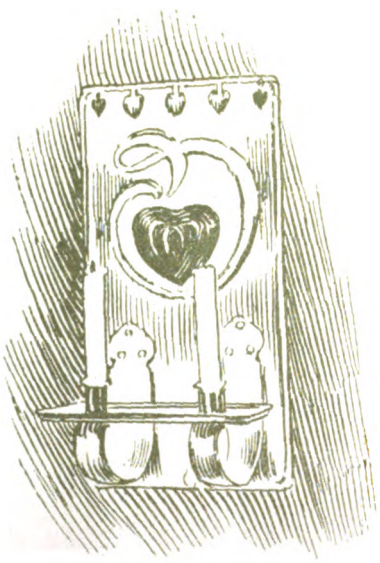
Treatment of An Entrance

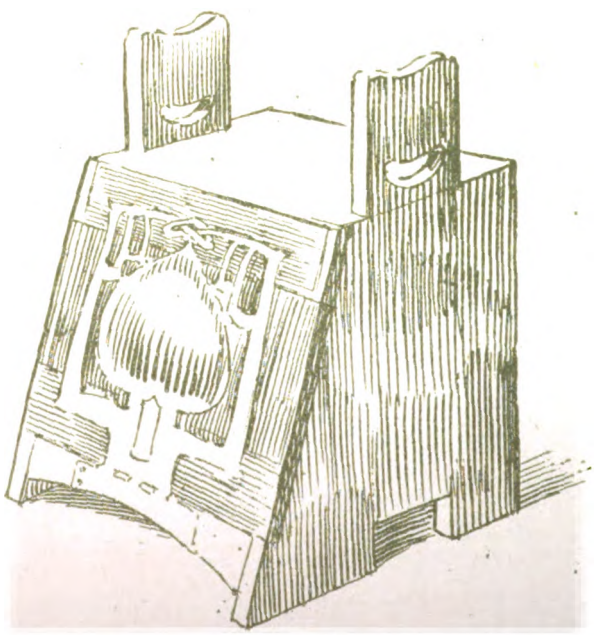


A Door Plate

At W.J. Neatby Evans & Co's
15 Percy St.
No 1.



A Wall Sconce



A Coal Box

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DESIGN FOR A STREET FRONT.

HALF INCH SCALE

1 0 5 10 15 20

MATERIALS.
PORTLAND STONE.
RED HAND-MADE BRICKS.
GREEN WESTMORELAND SLATES.
CAST LEAD.
OAK.

PLAN SHEWING JUNCTION OF GABLES.

PLAN THROUGH FOURTH FLOOR WINDOWS.

PLAN THROUGH FIRST FLOOR WINDOWS.

ROYAL [illegible] ARCHITECTURAL SCHOOL.
DESIGN BY A. E. GORDON.

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degree assimilated to those customary in law cases? The competitors, having studied for months the problems involved, would be able to point out to him how far their plans had solved them, and where their opponents had failed. It is possible that, however fair and able, the assessor may have missed them. They should not be condemned unheard.

As to the objection that the assessor would thus know who the competitors were, and might be influenced to give the award to a favourite or a friend, such a suspicion amounts to a libel on the assessor's character. It would be more dignified for the assessor to declare himself incapable of such action by making the decision, knowing who the authors were. It might prevent his overlooking merits in the plans of architects whose character and reputation and the work they have done are a guarantee that they could be trusted to carry out the work. By refusing to know the competitors, the assessor neglects what is a far more important consideration in the selection of an architect than making competition drawings. The faculty of winning competitions is often not a gift of the best architects.

The selection of the assessor is the most important factor for the fairness of a competition. Why should not the competitors appoint him by their votes? It would give a better guarantee that they could trust him to understand and appreciate their designs, and if the majority appointed one whom they thought unlikely to do so, they would be able to withdraw before wasting their time and risking their reputation. There would be a better chance of just decision if there was more than one judge, as in important cases in the Law Courts. Opinions vary as to what constitutes good architecture. Different views of what designs are best may honestly be held. A judge may see fit to alter his opinion on the representations of his colleagues.

As regards the labour and money risked by competitors, there should be a stipulation that architects invited to compete should each be paid a sum towards their outlay. Competitions, wisely conducted, might advance the art and produce good buildings. They should be made such that other architects than those who usually gain them would not hesitate to engage in them; that work done as well as the accidents of competition drawings should be an element in decision; that the judges should have the confidence of the competitors for their appreciation of art in architecture in the various developments now prevalent.

Mr. Stevenson next referred to the modern rules and regulations by which the designs of buildings are hampered and restricted. These have generally been devised by doctors and sanitary experts for excellent and necessary objects. But instead of availing themselves of the knowledge and experience of architects they devise crude and often tyrannical rules without adequate knowledge of building construction, and without thought as to the architectural appearance of the cost of their requirements.

The London Building Act would have been a far more effective measure had the County Council arranged with a body of architects, such as the Institute, the provisions for ensuring the necessary requirements, and the £20,000 Parliamentary expenses would have been saved. The Local Government Board's model by-laws ignored local modes of building, and reduced houses all over the country to a uniform level of dulness. The recent police act for Scotland, to ensure ventilation, decreed that ground-floor ceilings should be 9 ft. 6 in. high, and bedrooms 9 ft. But this did not ensure ventilation; it rather provided space for vitiated air to accumulate. Such regulations spoiled cottage architecture, made buildings needlessly costly—indeed, prevented cottages being built.

Equally foolish and costly is the regulation that every sleeping-room over 100 ft. area should have a fireplace and flue, though it would probably never have a fire in it, and would most likely be stopped up with a smoke-board. Why forbid half-timber construction? It is a most charming development of old English architecture, and houses so built have lasted for hundreds of years. It gives beauty to landscape, and the risk of fire is insignificant in isolated cottages. The precautions against fire are needlessly oppressive for low or isolated houses. Carrying the party walls above the roofs in ranges of low houses spoils their appearance, and is unnecessary if the slates are bedded on the walls.

In some rural by-laws the needlessly tyrannical provision that all woodwork should be kept back 4½ in. from the face of the wall has been revived after it had been removed from the new London Act. Another needless regulation, showing ignorance of building construction, is that compelling footings to be put to walls besides concrete foundations, which are perfectly stable without them. In conclusion, the author urged the institute to press upon the authorities the acceptance of by-laws, ensuring sanitation, ventilation, fire prevention, and stability, but drawn with common sense and knowledge of building, and which would not hamper and ruin architecture and cause needless cost.

ON FLATS.*

By EDWIN T. HALL.

ACCEPTING the fact that flats as a distinct class of property have taken firm hold of London, and consequently afford an extensive field of operations for the architect, let us consider what are the problems to be solved when one has to design a building of this class. First, locality will have something to say. If the site be in a main West End thoroughfare where shops are the essentially lucrative part of the property, and have to form the ground-floor, or possibly two floors, it will not, as a rule, be found to be remunerative to put family residences above, but bachelor suites generally with one sitting-room, one bedroom, and a bathroom will be found to meet a considerable demand.

In the side streets of clubland similar suites, sometimes with a manservant's room attached, will realise high rents.

In Bayswater, Kensington, Chelsea, Westminster, etc., flats over shops will as a rule only be taken by the lower middle-class, but in blocks which are exclusively residential and of good style, there will be a considerable demand from well-to-do people of all sorts who do not wish for the trouble of a large house, the expense of a garden, etc., and who periodically shut up their flat and go away.

In Hampstead probably as high rents can be obtained as in Kensington, but in Battersea Park, and still more in places like Brixton and such suburbs, the style and the rents must be simpler and cheaper respectively. The locality, therefore, and consequently the class of tenant will exercise an influence on the whole design.

I have noted that as a rule family residences for well-to-do people will not be readily taken if over shops and in the heart of London. It is strange that this objection does not hold in Vienna and Paris, where family suites in the heart of the cities are the rule, and are sometimes sumptuous. I suppose the difference lies in the temperament of the peoples.

In England the mistress of the house and the family generally like to have the opportunity of being quiet; "a quiet evening at home" one constantly hears as a phrase. In France and Vienna the genius of the people is for bustle, vivacity, stir, and movement. To some natures quiet is appalling and abhorrent.

STAIRCASES.

Another difference to be noted is that in Paris the rule is make a service staircase in addition to the principal staircase; in Vienna and London this is not usual, although of course there are many instances to the contrary.

In a building with only one principal staircase the service staircase is a great protection in the event of fire, and where the floors are extensive I think should be made compulsory, but it should be at a distance from the other, and should be next an external wall with windows in it to enable the smoke to escape.

In some modern and handsome Parisian buildings there are stately principal staircases which are lighted by glazed partitions, or, as we call them, "borrowed lights," from the service staircase which itself has windows. This is bad. If a fire occurred, and the flames went up one staircase, the other would be rendered useless for escape by the breaking of the glass partitions between. When there are two or more principal staircases this fire exit can

* Extracts from a paper read before the Architectural Association on Friday evening last.

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be made by carrying both or all up to the roof, forming there a fire-resisting passage from one to the other.

In St. Ermin's Hotel and Mansions at Westminster, designed by me, where the buildings cover a site of about an acre, and there are about 650 rooms, I have six staircases with such intercommunication.

It is strange that in Vienna very large blocks have sometimes only one staircase, with a comparatively narrow passage leading to it from the street through the main block. There is one such on the screen where there are six stories and four suites on a floor.

In London the reason for excluding service staircases is generally the desire to keep tradesmen's boys out of the house, and to avoid the uncontrollable "back door." Very frequently goods are transmitted from the ground floor by small hand-service lifts passing outside the kitchen window or service hutch, and very useful and speedy lifts can be made by using bicycle wheels at top and bottom with ball bearings, wire ropes, and two balanced covered cages or buckets. Apparently in Vienna in many buildings all goods come up the one staircase to the front door.

SOME HYGIENIC CONSIDERATIONS.

A further point to observe is the very small kitchens and offices of the Paris and Viennese flats; 13 ft. by 10 ft. appears to be considered ample, and many are much less. There is no scullery, but sometimes a small pantry with sink is attached. This, however, is by no means general, and a larder is still more rare.

I am told that, small as the kitchens not unfrequently are in Vienna, it is by no means unusual to find them very handsomely fitted, the walls tiled and decorated with handsome ware. My informant says perhaps £300 is spent in such a way, and the mistress takes her friends to see the kitchen.

Yet another point of dissimilarity from our practice is the fact that in Paris frequently there is apparently no bedroom for the servant within the suite.

In some cases the servants' bedrooms for the whole building are on the top floor, although there are many separate suites in the building. I should think a good deal of inter-family gossip is thus exchanged.

In Vienna generally one small bedroom for a servant is provided, sometimes opening only from the kitchen.

In London it is usual to house the servants within the flat, but here, as well as in Vienna, the vice of making a bedroom open out of the kitchen is still practised, and when one reflects that slops have to be carried through the kitchen in times of sickness and of health, it will be seen how insanitary such an arrangement is.

Our friends abroad are not always so particular as we are in other sanitary matters, and you will note on the screens some bath-rooms with no light and not against external wall, larders similarly situated, even behind water-closets, and the evil practice which obtained in England, even within the last half-century, is still maintained abroad, of lighting and ventilating water-closets from staircases and passages. Here that is no longer possible, thanks to our sanitary laws, and I feel sure that our friends abroad now realise the evil of such arrangements, and will not be offended at my mentioning the defects should any of them honour me by reading my paper.

I have yet another little sanitary point to mention, and that is the danger of taking soil pipes of flats down inside the building against external and even internal walls in chases. Such chases afford channels for carrying infectious diseases from one suite to another. They are passages for vermin and for sound, to say nothing of the danger if the pipe leaks. Our laws have practically banished this evil from London, although I well remember to have seen it practised in some of our pioneer flats.

Internal staircases, however handsome they may be, with only top light and ventilation, are also to be deprecated in confined areas where there are many stories of flats. Such staircases, in the event of fire, become furnace shafts, and at least get full of smoke, choking those trying to escape. The odours of the lower part of the house ascend to the top, and again illness is conveyed by them from one part to the other.

While many will realise the last mentioned evil, it is not all who pay attention to the point I am about to mention, and that is the necessity for a current of air through small internal areas or courts extending from the ground to the sky. These small courts are frequently and not inaptly called "well holes."

Now every one knows that the air at the bottom of a well is often so bad that a candle will not burn in it. A "well hole" area without through ventilation is in a lesser degree bad in the same way; and when, as is generally the case, there are gullies at the bottom giving off foul gases from fermenting deposits, it can be realised that windows opening into such areas are merely inlets for poison. All such areas should be ventilated by means of an inlet of large capacity at the bottom from some road or considerable open space where there is always movement of air going on.

Fourteen or fifteen years ago I realised the evil and practised the remedy, and we obtained its insertion in the London Building Act of 1894. I was much pleased to see the necessity for this bottom inlet to small areas urged in a recent letter from M. Poupinel, of Paris, when he was kindly forwarding some of the drawings now exhibited, and it will be seen that he has inlets to his small courts in the houses Nos. 8 and 10, Rue Descamps. M. Poupinel has also taken fresh air flues from the exterior to every fireplace in his building, and he has outlet ventilators in his kitchens.

We, in London, are accustomed to outlet ventilators from not only kitchens, but reception rooms and bedrooms, but they are uncommon abroad, and the atmosphere of a stove-heated and unventilated room on the Continent is something to be remembered by those accustomed to fresh air.

There is only one further point to mention before leaving this hygienic branch of my subject, and that is the desirability in our cities of having large windows in our rooms and keeping the tops of them reasonably near to the ceiling.

A subject that may profitably engage our attention for a minute or two is the construction of the floors.

FLOOR CONSTRUCTION.

In all high buildings for many families the floor should be of fire-resisting material. Some years ago Mr. Evans patented a floor which was composed of ordinary wooden joists laid close together and well spiked, thus making a solid wood floor. I do not know what has become of the system, but its tests showed it to be practically impervious to fire, and from its fibrous character it was claimed to be sound-proof. Another mode of constructing a floor is to fix rolled steel joists and build 4½ in. thick brick arches between. This used to be the most common method of construction in London, and it is still much used in Vienna. We see it shown on one of the exhibited designs. Above the brickwork were wood joists and an ordinary floor. The most common, because cheapest, method used in England is, however, to place rolled steel joists at regular intervals, generally 2 ft. apart, and to fill the space solid with concrete made of cement and coke breeze, bringing the soffit of the concrete an inch or two below the joists to protect the steel from the direct action of the fire. Frequently small fillets of wood were, and sometimes still are, laid on the concrete, and the boards nailed to the fillets: without ventilation, however, if the floor is covered with linoleum, such fillets and the boards over them may decay from dry rot, and the same remark applies to linoleum laid on boards nailed direct to concrete.

One objection to the solid concrete floor is that it is not impervious to sound. The only way to remedy the evil is to get an air cushion beneath the floor itself, and to suspend the ceiling. There are several ways of doing this.

To get over the difficulty regarding wood floors where these are intended to be covered, I have in many recent buildings dispensed with boards, trowelled the floor with cement, and covered this with linoleum, either plain or ornamental. At once a furnished appearance is given to the floor, and rugs or carpets look well on it.

The material is pleasant to the tread, it is not so resonant as wood, and there are no joints in which vermin may harbour.

I much fear that so much detail is wearisome, and yet it is valuable, and for the most part essential to an architect, to know it all before he can start to make a good design with the hope of getting a successful result.

Turning now to the æsthetic side of the subject, let us consider the block plan.

(To be continued.)

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FOUNDATION STONES.

By GUY WILFRID HAYLER.

FROM time immemorial a certain glamour has shadowed the laying of the foundation-stone of a building. Tactitus has told us that Rome made merry on July 21st, 70 A.D., when the rebuilding of the triple temple in the Capitol was begun, and even ten years before Christ, in the same city, a certain ceremony attended the commencement of the portico of Minerva by Quintus Caccilius Metellus. The people of Venice rejoiced at the founding of the great ecclesiastical structure of St. Mark's. In the early days it was the custom for the person who commissioned the undertaking to lay or help to lay the first stone of the work. Wealthy friends were invited to the ceremony, and it was usual for them to assist in bearing the expense of the building. But this was in the time when stone was universally used as the building material; later on, with the use of brick for the walls below the ground, and the increase in the importance of the function, it was postponed until a certain stone duly inscribed was prepared for position. But it is neither the foundation-stone, foot-stone, or first stone, and the mediæval custom of laying the first stone at the north-east corner of the building has been forgotten. Nowadays it is laid anywhere, though more often near the main entrance than elsewhere. It is difficult to discover when the now almost world-wide custom of placing newspapers and coins under foundation-stones originated. It is probably quite a modern innovation.

It is safe to say that the foundation-stone ceremony will never fall into disuse. It is always an ingenious method of raising the wind, and again the colouring of romance must always surround the birth of what may be an historic edifice. Still it would be much more appropriate and correct to describe the stone by some other name than "foundation-stone"; and, again, much of the tawdry show and amateur masonry which attends the ceremony might be abolished or, at least, modified into something rational. The coin and newspaper idea might also be varied. We can imagine our successors or Lord Macaulay's New Zealander digging amidst the ruins of our present-day civilisation and beholding nothing but coins and newspapers. Surely we want to let those that come after us know that we had some other notions than these. Why not bury information which will be of real service to them? There is no doubt that a carefully-prepared parchment document, embracing a history and statistics of the objects of the building, would be invaluable. And why should it not be done? How many times have we not feasted on the wisdom and forethought of the ancients, and to what an extent do we owe an indebtedness to them which we can never repay? A reform in the simple matter of foundation-stones would be at once welcome and desirable

GLASGOW INSTITUTE OF ARCHITECTS.

A SPECIAL general meeting of this institute was held on Monday last, Mr. Alex. Petrie, vice-president, in the chair. Sympathetic reference was made to the death of one of the oldest and most respected members of the institute, Mr. John Burnet, F.R.I.B.A., ex-president, and father of the present president, which took place on the 15th inst. Mr. Burnet had reached the venerable age of 87 years, and was held in the highest esteem by all who knew him. He was one of the original members of this institute, was long a member of council, and held the office of president from 1876—1878. Latterly he was on the roll of honorary members. He became a Fellow of the Royal Institute of British Architects in 1876. During Mr. Burnet's long career as an architect, he and his firm of John Burnet & Son designed many important buildings in Glasgow and the West of Scotland, among others the Western Infirmary, the Stock Exchange, the Merchants' House, the head offices of the Clydesdale Bank, and of the Union Bank of Scotland, Woodlands Road United Presbyterian Church, the mansion-houses of Auchendennan and Arden, and Rowardennan Lodge, Loch Lomond. Mr. Burnet's relations with the institute and his professional brethren generally were of the most cordial character, and his genial presence and wise counsel will be greatly missed. It was unanimously agreed that the secretary be instructed to send an excerpt from this minute to Mr. Burnet's widow.

The meeting then took into consideration the unanimous report of the council regarding the Royal Infirmary competition, and a letter addressed to the chairman and managers of the infirmary, which had been prepared by them, was approved of and adopted. The secretary was instructed to forward the letter to the chairman and managers, and to send copies to the allied societies and to the public press.

COLOUR IN ARCHITECTURE.

PROFESSOR BALDWIN BROWN, lecturing to the members of the Edinburgh Architectural Association on the 16th inst. on this subject, remarked that colour could not be regarded as essential to architectural effect, though to certain forms of architecture it might add considerable æsthetic charm. Architecture was an art of form, and could express itself, as in the Craigleith stone structures of Edinburgh, the exteriors of Wren, or the interior of St. Front at Périgneux in France, without any aid from ornament or colour. A monumental building in stone, in which the outward aspect expressed the structure, and the surface texture was an index to the excellence of the material, was, after all, the highest achievement of the art. If the material of the fabric was in itself of a fine hue, this solved the question of colour in the most satisfactory manner, but an architect would think first of the quality of the building material and not of its tint, and so the principle was maintained. This could be held established in spite of the very numerous and beautiful buildings of all ages and climes which depended largely for their effect on added colour. As a rule they were not of the most monumental materials, but exhibited veneers of marble or plaster over rubble or brick. In the case of these materials, as also of wood and iron, colour was a natural finish, and the most should be made of it. Plaster, as the most widely used of these secondary materials, needed special consideration. The highest form of its polychromy was the mural picture.

The lecturer then proceeded to discuss the conditions of mural paintings, and its prospect in modern days, and the necessity for success of the co-operation of various artists skilled in different kinds of work was insisted on. It was a matter that concerned associations of master painters just as much as Royal Academies. The architect must, after all, be the presiding genius of the work. Especially would he have to see that where there was a colour effect in his own materials the decorative scheme of the paintings should correspond thereto. He had also, what was more important, to mark out the places where decoration in colour was to come. This had been done very definitely in the Catholic Apostolic Church—externally in a monumental stone building, with colour in its material, and internally prepared for mural painting. When this was finished, walls and roof alike, the whole would be a singularly interesting production of art. The difficulty of the question of the internal decoration of St. Paul's at London was that the architect had finished his interior, save in the roofs, with fine stone work, beautiful in itself in hue and texture; and the attempt to force colour and gilding upon this, where the architect had evidently never contemplated them, could never be satisfactory. The problem of the choir was less difficult, because there a certain richness existed in the fittings which carried out the decoration on the roof.

A vote of thanks was conveyed by the president, Mr. Henry F. Kerr, to Professor Baldwin Brown for his address.

AN ART COMMISSION FOR THE CAPITOL - WASHINGTON, U.S.A.

THE decorations of the public buildings at Washington and their architectural treatment, interior ornamentation and furnishing, have departed so far from the proper standard of taste that a bill has been introduced in Congress, states the *Boston Transcript*, for the purpose of

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creating a Capitol Art Commission of nine members, of whom two at least shall be professional architects, two professional sculptors, and two professional mural painters, all to be appointed by the President, subject to confirmation by the Senate. The duties of this commission shall be to recommend a plan for completing the decoration of the Capitol building at Washington, and it is hoped that the results of its work will extend towards establishing a standard of excellence in the decoration of the public buildings throughout the country.

The board of trustees of the National Arts Club of New York, whose membership is widely scattered over the whole country, has been actively engaged in calling public attention to the importance of establishing such a commission. The Boston Art Club took favourable action on the subject, and through a special committee a memorial was sent to Congress advocating the passage of the Bill, and this committee have later submitted to the President their recommendation of Mr. Cyrus E. Dallin, the well-known sculptor of this city. At the recent meeting of the National Society of Architects, held at Washington, similar action was taken in advocacy of this bill, and it is desired that persons or organisations interested in the subject shall communicate their opinions by way of petitions to the Senate and House of Representatives, or by letters to members of Congress.

IMPROVEMENTS IN TOTTENHAM COURT ROAD.

THE City Lands Committee have reported to the Corporation that the question of dealing with the Corporation's property on the east side of Tottenham Court Road had had their anxious consideration, and in view of the fact that the leases of the larger part of the property would expire at Lady Day, 1902, they deemed it their duty to lay before the Corporation a plan showing the manner in which it was proposed that the estate should be laid out, together with suggestions as to the mode of dealing with the leases as they expired. Alfred Place, which is parallel to Tottenham Court Road, has at its north and south ends short streets (Chenies Street and Store Street), the houses in which are arranged in the form of a crescent. Such planning was quite out of date and was to be deprecated for many reasons. The abolition of these crescents was, after some negotiation, approved by the late St. Giles District Board of Works, and the formation of two new streets 50 ft. wide had now received the sanction of the London County Council. Alfred Place is to be prolonged nortward—and southward—on the north to meet Alfred Mews (to be widened to 50 ft.) and on the south to meet a new street which runs into Tottenham Court Road, also 50 ft. wide. The Corporation had received several petitions from tenants on the estate, notably one from Messrs. Hewetson, Milner, and Thexton, house furnishers, who occupied a considerable site at the northern end of the property. They had also been approached by many other occupiers who desired to retain their holdings. It would no doubt be wise to come to an arrangement with the largest tenants, but before any definite propositions were made the committee thought it highly desirable to ascertain the proper value of the land. The Corporation have approved the proposed laying out of the estate according to the plan, and authorised the committee to deal forthwith with the property generally, by auction or otherwise, reporting from time to time.

THE DISPOSAL OF STREET REFUSE IN THE CITY OF LONDON.

THIS question has for some time past been under the consideration of the Corporation, and among other things, the practicability of generating electricity from steam raised by burning of the refuse. Mr. D. I. Ross, the City engineer, reporting to them on the subject, states that last year 74,621 loads of refuse were removed from the City to Lett's Wharf, Lambeth, near Blackfriars Bridge, the lease of which expires in 1909. About 60 per cent. of the house and trade refuse is cremated, but the street sweepings, slop, and market refuse are shot into barges and removed daily. The Corporation, having permitted two electric lighting companies to obtain powers to supply electricity for lighting and other purposes, could only generate electricity for their own purposes or for street lighting. They were in a totally different position to other local authorities who are supplying electricity in their various districts and who are cremating their refuse and utilising the power generated therefrom in connection with their electricity works. It was extremely doubtful whether the house and trade refuse could be profitably dealt with by cremation, as it consisted principally of paper, straw, and packing materials of very little calorific value, exceedingly bulky and difficult to manipulate. Although from a sanitary point of view cremation was preferable to any other mode of dealing with the refuse, mature consideration leads Mr. Ross to believe that, having regard to the difficulties of obtaining a suitable site in the City and the expense thereby entailed, and to the difficulties that would arise in working any apparatus that might be erected without being stopped by legal proceedings, the objections to this course were almost insuperable, and in his opinion it would be better to barge the refuse direct into the country from the City than deal with it there. Mr. A. A. Vopsey, the electrical engineer of the City, has also made an interesting report to the Corporation on the subject. The Streets Committee, on these reports, have advised the Corporation to barge the dust and refuse into the country and to obtain some suitable site for the purpose.

NEW DOCK WORKS AT GOOLE.

THE Air and Calder Navigation Company have deposited plans and sections of the new works at Goole, for which they seek Parliamentary powers. They propose to construct a new dock to the west of their existing docks. This will be approached from the other docks by a "cut" or dock entrance, which will cross Bridge Street. The new dock will be 2,000 ft. long, of which 1,500 ft. will have a uniform width of 260 ft., but the remaining 500 ft. will be narrower and of irregular formation. This part will finish in a narrow "cut," which it is intended to connect with a timber pond, having an outlet into the Aire and Calder Canal. The shallower portion of the dock will serve as a basin for keels and river craft, and provision is made for a patent repairing slip for small vessels. The entrance to the dock will be 60 ft. wide, with a depth of 20 ft. of water. A huge swing bridge, spans the canal, and the sections show a clear space of 6½ ft. between the surface of the water and the under girders of the bridge. This latter will be 160 ft. long, and built of steel girders, hydraulic power being the motive force for opening the bridge, as also for raising the opening bridge between the dock and the timber pond.

TRADE NOTES.

A LARGE clock has just been erected upon the church tower at Bishopstrous, Wiltshire, which strikes the hours and shows time on a large dial facing west. It has been made to Lord Grimthorpe's designs by John Smith and Sons, Midland Clock Works, Derby. The same firm are making a large clock for St. Michael's Church, Bournemouth.

MACKAY'S Patent Invisible Roof and Turret Ventilators and Improved Fresh Air inlets are being used in the ventilation of the new schools, presently being erected at Anstruther, N.B. The ventilators are manufactured by Messrs. Cousland & Mackay, Ventilating Engineers, 150 Hope Street, Glasgow, the sole makers.

THE Leeds City Council have accepted the tender of John Elwell, The City Fencing Iron and Art Metal Works, Birmingham, for the supply and erection of the extra strong unclimable fencing required in connection with Jowett's Park. This makes the third contract placed with John Elwell by the Leeds City Council within the last six months.

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The British Architect.

LONDON: FRIDAY, FEBRUARY 1, 1901.

GLASGOW INFIRMARY COMPETITION.

WE welcome the vigorous and decided protest made by the Glasgow Institute of Architects in regard to the action of the chairman and managers of the Glasgow Royal Infirmary respecting the awards in the recent competition. The ground of protest is well defined, being mainly and particularly based on the fact that the accepted plans, no less than the sketch plans furnished to competitors, "are in many vital particulars inadequate and out of date," a point to which we specially alluded in our previous remarks on the awards. In fact, the letter of protest states plainly that the plan in the selected design is but an elaboration of one of these sketch plans, the original author of which actually proposed the adoption of his own elaborated scheme at the meeting held to consider Dr. Anderson's report.

To our mind this is a really serious matter, affecting not merely the unsuccessful competitors, but also the public. For here we have the award of so capable an assessor as Dr. Anderson set aside, and *by a majority of one*, a design brought in from outside of those chosen by the assessor from which to make his final selection, and actually adopted for execution, although said to have the radical faultiness of plan contained in the sketch plans issued to competitors. Yet, further, it is also stated in the Glasgow Institute of Architects' protest that the Jubilee block of the accepted design, if carried out to the height of seven storeys, as proposed, "will dwarf and irretrievably injure, for all time, the external appearance of the cathedral." So that not only have we plans "in many vital particulars inadequate and out of date," but a design which will seriously affect the architectural view of one of Glasgow's most-treasured public buildings – one of the finest Gothic structures in the whole country.

This is a matter for Glasgow people to take a real and immediate interest in. The new infirmary is to be built for them and largely with their contributions, and the least they can do is to see that they obtain a structure which, in its internal planning and arrangements, shall properly and adequately fulfil all the most modern and improved requirements. If they do not care to accept the statement of the Glasgow Institute of Architects as a final opinion, let them demand a reference, as the Institute themselves suggest, to some independent hospital authorities of recognised and outstanding position, for consideration and report. As regards the question of interference with the cathedral that is surely a matter about which the Corporation ought surely to have something to say, as well as the citizens. Such an interference as indicated in the Institute of Architects protest most certainly ought not to be permitted.

We can only hope that both the Corporation and citizens of Glasgow will not permit the protest of their architects to pass unheeded. From such a body of expert opinion, including some of the ablest architects in Scotland, it is impossible to turn away with the idea that it is of little or no account. On the contrary it is worthy of the most careful attention and consideration.

The result of this competition illustrates very forcibly the grave disability an architect works under when the conditions of a competition are themselves bad or inexplicit. In this Glasgow competition competitors were placed in a more than usually tight place, because probably they did not realise to the full the medical failures of the sketch-plans they were supposed to follow until they had really considerably matured their own ideas and given them practical shape. Presumably the only thing to do from a business point of view was to follow the sketch-plans. No one who knows the work of the author of the accepted design but would feel that he must have followed the committee's suggestions rather than his own judgment, and that if he had not had the sketch plans before him he would have done much better without them. His Glasgow Exhibition buildings alone prove his possession of much real practical ability as well as architectural cleverness. It is always a difficult problem for an architect to know just how far he should fetter his judgment with conditions he regards as architecturally defective. For it is always quite on the cards that if you can show a competition committee a more excellent way of meeting their requirements than they themselves may have had, or suggested, that they will accept it. On the other hand, a fairly literal following of the instructions would seem to be, on the whole, the safest course. In the case of Glasgow Infirmary the competitor who followed the sketch plans most closely, and more or less incorporated their radical defects in his own plans, secured the most votes, and even Dr. Anderson himself selected for the first place a design which adhered closely to the sketch plans.

What we feel to be so really an essential to architectural success in competition work is that the question of conditions and instructions should somehow or other be settled on right lines. Of course, a competent professional assessor, called in at the outset of the competition, should be able to determine a fair basis for both instructions and conditions. But, in addition to this, we think that *bona fide* competitors should be invited to ask any questions, or make any suggestions, in reference to these conditions and instructions within a specified time. Then the assessor should consider them, and if he thinks fit to incorporate any of the suggestions made let him notify the competitors to that effect, and at the same time answer the questions put to him. But, in any case, the conditions and instructions should be drawn up under the judgment and direction of the assessor, and the conditions should be framed on the lines of the R.I.B.A. "Suggestions." Beyond this, however, the individual co-operation of architects themselves is urgently needed. No architect should enter a competition where the conditions do not commend themselves to his professional judgment and his business common sense. Sometimes it is perhaps only one small thing that spoils the conditions, but he is wise who either sees that the defect is amended, or else abstains from competing. This may seem a hard and fast rule to draw, but our experience of competitions is that it is the only safe rule.

We are sure, too, that the assessorship question will have to be reconsidered and determined on more satisfactory lines than at present. In important competitions the assessorship should be in the hands of more than one individual. We do not think three assessors would be too many to decide the issue of a competition like that say, of the new Strand frontages. In such a case the extra cost incurred would be well spent, and could not be begrudged, having regard to the importance of securing a thoroughly just and satisfactory judgment. We think, also, that the present method of appointing assessors leaves much to be desired, but it seems difficult to suggest a generally acceptable remedy. We have a preference for such appointments being undertaken by the Council of the R.I.B.A., or the R.I.B.A. Competitions Committee, and not being left in the hands of a lay committee, or made on the sole judgment of the President of the Institute. Mr. J. J. Stevenson, in his paper on the disabilities of architects in regard to the production of good modern architecture, in referring to the competition question, asked why the competitors should not themselves appoint the assessor by their votes. He said he thought it would give a better guarantee that they could trust him to understand and appreciate their designs, and if the majority appointed one whom they thought unlikely to do so, then they could withdraw before they wasted their time and risked their reputations. In some cases such a procedure might be possible, though we are not sure that it would always work out satisfactorily. But of one thing we are sure, architects must see to it that competition conditions shall either be satisfactory and right in the first instance, or rigidly abstain from competing. As Mr. Stevenson wisely suggested, if we cannot end the competition system, we can at least do our best to mend it, and so mended, competitions might even advance architecture and produce good buildings.

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A MODERN VIEW OF LONDON CHURCH ARCHITECTURE.—VI.

By T. FRANCIS BUMPUS.

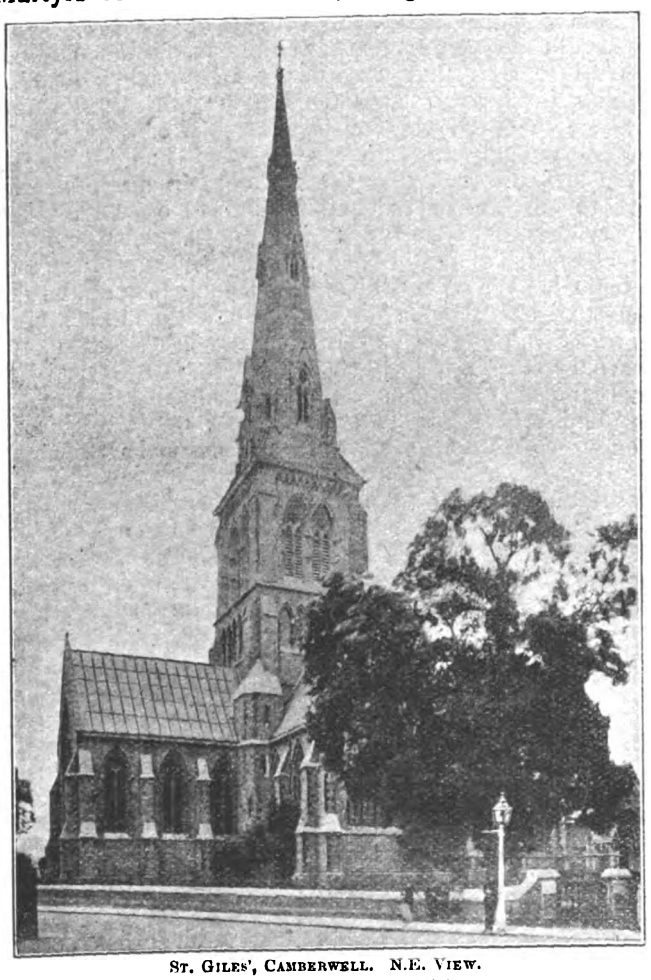
(Continued from page 40.)

OF the churches raised in London for the Church of England between 1840 and 1860 after the ancient models, none was more deservedly praised than St. Giles, Camberwell, from the designs of Scott and Moffatt. Illustrating that style of architecture which attained its highest grace in this country towards the end of the thirteenth century—the Geometrical Decorated—Camberwell Church enjoys a majestic situation at the junction of two roads, enabling the neat, compact plan, with a graceful tower and spire rising at the junction of the four arms, to be viewed very advantageously.

This is no small matter for rejoicing, for in too many instances the most unworthy specimens of ecclesiastical architecture occupy commanding sites, while structures of real merit are hidden away in districts which the amateur or *dilletante* would hardly think of penetrating in the pursuit of ecclesiology.*

That Camberwell church has defects it would be idle to deny, yet when we consider it was built during the lifetime of those who had witnessed the erection of such absurdities as St. Pancras, and All Souls', Langham Place; St. Mary's, Haggerston; and the Chapel in Somers Town, such faults are excusable, and they are just those that present themselves only to the educated eye. Taken as a whole, therefore, St. Giles', Camberwell, is, for the date of its erection (1842-1844), one of the most pleasing specimens of a church built after the ancient models that London presents.

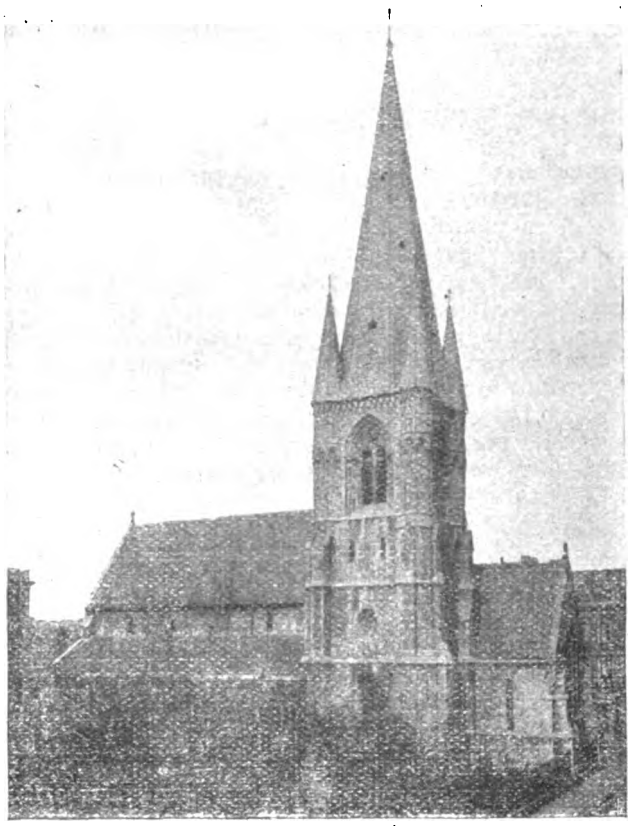
Reared on the site of an old church destroyed by fire on the night of Sunday, February 7th, 1841, St. Giles', Camberwell, was completed and dedicated November 21st, 1844, and, together with a contemporaneous work, the Martyrs' Memorial at Oxford, brought its authors promi-



ST. GILES', CAMBERWELL. N.E. VIEW.
Sir G. G. Scott, Architect, 1842-44.

nently before the public, much of its excellence being due to the then vicar—Rev. J. G. Storie—a man of great taste and judgment, who, determined to have a good church, so far as his day permitted, got it.

Scott's next London work, St. Matthew's, City Road, finished in 1848, has many excellent points. In style and



ST. MATTHEW'S, CITY ROAD.
Sir G. G. Scott, Architect, 1846-48.

plan it differs from St. Giles', Camberwell, being Early English, and consisting of a nave, chancel, and steeple at the east end of the south nave aisle. For its situation in so busy a thoroughfare, St Matthew's, City Road, has scarcely that elevation which a town church should invariably possess, but the various parts group very pleasingly; and the steeple—based, as regards its outline upon a south Lincolnshire model*—has, for elegance of proportion, scarcely been surpassed by any other of modern times. The manner in which the rough work has been carried up to its summit, pierced here and there with small foliated openings, is a remarkable feature of this spire.

A solemn and devotional interior is St. Matthew's, City Road, rendered additionally so by the stained glass with which every window in the lower part of the church is filled. This is chiefly the work of O'Connor, and, for the period of its execution—*i.e.*, before 1870—must be considered highly meritorious. The least satisfactory glass is that by the same artist, which, filling the quintuplet of lancets at the east end, forms a memorial to a former incumbent, Rev. J. Lawrell (died 1865), under whom and his successors, Blomfield and Panckridge, St. Matthew's, City Road, enjoyed a reputation for hearty choral services, tasteful floral decorations, on great festivals, and moderate ritual. Well placed as the church is on the route so thronged from the City to Islington and Highbury, it attracted large numbers repelled from the Islington and Clerkenwell churches by the coldness and irreverence of their services.

Another very meritorious church was begun by Scott, in the Middle Pointed style, a year later—St. Matthew's, Great Peter Street, Westminster, the foundation stone of which was laid on the same day as that of another well-known Westminster Church, Holy Trinity, Bessborough Gardens.

Of late years the interior of St. Matthew's, Westminster, has been greatly enriched and ameliorated by the introduction of colouration, and by the erection of a lofty rood-screen in the style of the fifteenth century.

* The noble group of churches erected between 1860 and 1870 in Shoreditch, Haggerston, Hoxton, and Plaistow, from the designs of Mr. Jas. Brooks, is a case in point.

* That of Sutton St. Mary, near Lynn, one of a grand line of churches extending from that point all the way to Sleaford. The prototype of St. Matthew's is, however, as well as the spirelets at its base, of lead, and a most interesting and valuable instance of a feature on so large a scale in that material.

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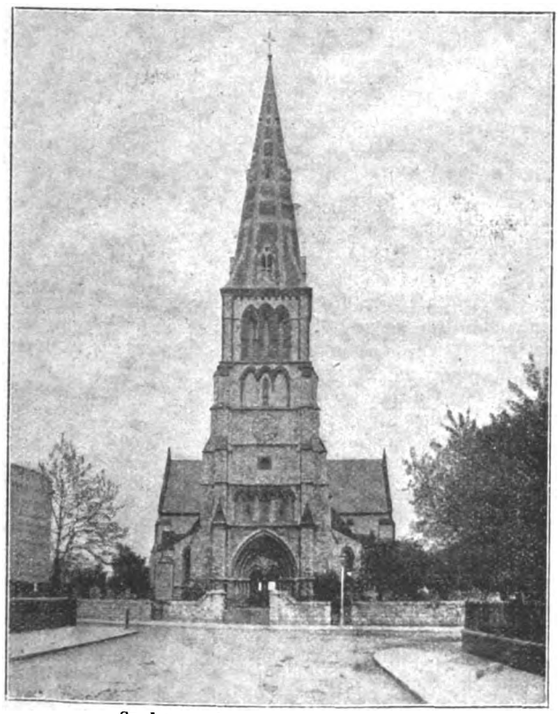
There is some very good detail about the exterior of this church. The eastern elevation is dignified, and the steeple forming a south porch is, albeit incomplete, an object which cannot fail to strike the observer from the majesty of its proportions. Scott's most sumptuous work in the neighbourhood of London during the earlier "fifties" is Christ Church, Ealing, where he had *carte blanche* from the foundress. Built before he had expressed his leanings towards the introduction of foreign forms and details, Christ Church, Ealing, is one of the most satisfactory churches designed by Sir Gilbert in a purely English style. Externally, the steeple, modelled upon that of Bloxham, near Banbury, is an admirable object, while internally there is much good and carefully considered detail—the foliaged work in the capitals of the nave columns, and the enrichments of the arch soffits, with mouldings of various flowers, being especially worthy of attention.

The Church of St. John, of Jerusalem, at South Hackney, although not built strictly in accordance with the rules laid down by the Ecclesiological Society, must be regarded as one of the most substantial and magnificent first-fruits of the Gothic Revival. It is an immense edifice in the later First Pointed style, and was in course of construction between 1845 and 1848, from the designs of Mr. E. C. Hakewill, who a few years earlier had built St. James', Lower Clapton, a small church with a not wholly unpleasing eastern elevation of yellow brick, and in the Lancet style.

The rector of South Hackney at the time of the building of this sumptuous church was the Rev. H. Handley Norris. He was one of the best known churchmen of his day, and took the liveliest interest in a work, which, despite many difficulties, he carried through to a triumphant conclusion, unfortunately surviving it but three years.*

That it has faults, and grave ones, even those most interested in South Hackney church must admit, and they were faults which a little preliminary reflection might have obviated. Particularly distressing are the eastern walls of the transepts, unrelieved as they are by fenestration or arcading, while the excessive breadth of the nave and chancel are sadly detrimental to that solemnity and poetry of design which forms so pleasing a feature in such con-



ST. JOHN OF JERUSALEM, SOUTH HACKNEY.
E. C. Hakewill, Architect, 1845-48.

temporary works as St. Saviour's, Leeds, and St. Giles', Camberwell.

But there is much merit about portions. The steeple, modelled upon that of St. Mary, Stamford, is very majestic, and groups pleasingly with the other parts when viewed from the north-east corner of the churchyard; while internally, the dark yellow stone of the columns and shafts, and such details as the inner plane of tracery to the clerestory windows of the nave, the diapering in the spandrels of the arcades with which the walls of the sanctuary are enriched, and Wailes' stained glass in the tall incipiently traceried lancets of the apse are all very creditable for their date.

(*To be continued.*)

*Mr. Norris died in 1851. A brass to his memory was placed shortly after in the north transept.

NOTES ON CURRENT EVENTS.

THE Royal Institute of British Architects' meeting, announced to take place on Monday evening next for the presentation of prizes and studentships, is postponed till Monday, 25th February, at 8 p.m., in consequence of the lamented death of Her late Most Gracious Majesty Queen Victoria, patron of the Royal Institute. We should also add that the Institute will be closed to-morrow (Saturday), the day of the Royal funeral. At the meeting of the 25th February, an address of condolence to His Majesty will be moved from the chair.

THE Architectural Association have postponed their meeting, which should have taken place this evening, to Friday next, the 8th inst.

THE annual dinner of the Liverpool Engineering Society, which was to take place on the 7th inst., is postponed.

THE Council of the Northern Architectural Association have sent the following resolution to Sir Arthur Bigge, K.C.B., C.M.G. :—"On behalf of this Association we beg that you will be the medium of conveying to His Majesty the King and the Royal Family the deep sympathy of this Association in their great sorrow, and at the same time to express their sincere loyalty and devotion to the Throne of these Realms." The resolution was signed on behalf of the Association by Mr. William Glover, the President, and Mr. A. B. Plummer, the Hon. Secretary.

ONE of the most absolutely beautiful portrayals of maidenhood in modern work, to our mind, is W. Reynolds-Stephens' bas-relief entitled Youth. This has been purchased for the Harris' Art Gallery, Preston, and is illustrated in the *Magazine of Art* for February. This beautiful decorative panel secured the artist the gold medal at Vienna last year. A sympathetic and capitally illustrated memorial notice of the late E. M. Wimperis appears in the same magazine. The illustrations are forcibly typical of this admirable artist's best work.

THE discovery of a Roman villa at Rothley Temple, in Leicestershire, Macaulay's birthplace, promises to be a very interesting one, for already a whole room has been exposed, with several small pillars rising from the concrete floor. It is, indeed, thought that it will turn out to be a better specimen than the one which may be seen in the heart of Leicester itself. The fine Roman villa recently on view at Darenth, is now unfortunately buried again. It does not appear to have been a paying speculation, hence its being covered up again. The British public have no special affection for Roman villas. They prefer their own.

A PAPER entitled "Legal Points for Architects" was read at a meeting of the Glasgow Technical College Architectural Craftsmen's Society, on the 25th ult., by Mr. John M. Arthur. Mr. Arthur divided his subject into two parts, viz., "The Legal Standing of the Architect," and "Legal Points relative to Buildings," leaving out the two subjects of building bye-laws and conditions of contract, as these had already been discussed by the society. The legal standing of the architect in such matters as "His position as agent and arbitrator," "Ordering materials on behalf of his client," "Certificates," "Ownership of drawings," and "Fees," was fully gone into, and law cases

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bearing on each enunciated. Among his other headings were :—"The liability for mishaps during building," "Mutual gables and properties," "Drainage and water conveyance," "Ancient lights," and "New charters." These were explained in a careful and lucid manner.

THE London County Council at their meeting on Tuesday, agreed to a report of the Housing of the Working Classes Committee recommending that the architect be authorised to expend a sum of £60 on overtime for the preparation of the working drawings of the Mill Lane, Deptford, lodging house. The committee also recommended that the estimate of £16,500 be approved for acquiring, under Part III. of the Housing of the Working Classes Act, the Caledonian Asylum and the site. The buildings to be erected would provide accommodation for about 1,400 persons in ten one-room tenements, 196 two-room, ninety-six three-room, and four four-room tenements.

THE Council also unanimously approved the following recommendation of the Improvements Committee, viz. :—"That the estimate of £1,315,000 (in substitution for the capital vote of £51,443, which was approved by the Council on November 6, 1900) submitted by the finance committee in respect of the Thames Embankment extension and Westminster improvements at Millbank be approved, and that, as the Council of the City of Westminster has undertaken to make the necessary contribution of £100,000, the Improvements Committee be authorised to incur expenditure on capital account up to £1,315,000 for the purpose of the improvements in question.

WE announced in our last "Notes from Boston," the death of a very well-known Boston architect, Mr. Edward Clarke Cabot, at the advanced age of eighty-one years. Referring to this event the last received issue of the *American Architect* says of the deceased gentleman :—"Mr. Cabot learned his profession, as the architects of his generation were obliged to do, mainly by himself, but he learned it well, and no more refined and scholarly work has ever been done in this country than that which he designed. He was, like so many architects, more particularly abroad than here, a skilful water-colour painter, and frequently contributed his works to the local exhibitions, but in architecture he found the widest field for his great and refined talent. The best of his buildings is, to our mind, the Boston Athenæum, on Beacon Street, one of the most beautiful works in the Italian Renaissance style in the country; but that by which he is best known is, perhaps, the Boston Theatre, which is not only peculiarly refined and elegant in detail, but is, in its acoustics and planning, still one of the best of modern theatres. Besides these two important structures, Mr. Cabot, at first either alone, or in connection with his brother, Mr. F. Elliot Cabot, and, later with Mr. Chandler, now Professor Chandler, of the Massachusetts Institute of Technology, designed a great number of buildings, generally distinguished by some delicately artistic feature which made them a common subject of discussion among architects. Personally, Mr. Cabot was a model of kind and gentle dignity. He was for many years President, and recently Honorary President of the Boston Society of Architects, which, if it could, would have kept him perpetually in that office, and, even after he absolutely refused to stand for election for another term, his wise and considerate advice was constantly sought."

THE movement in favour of the licensing of architects in New York seems to be gaining favour in that State, under the advocacy of some of the best members of the profession, and it seems quite probable that the Bill, printed on another page, may pass, and become law. Although we are quite sensible, remarks the *American Architect*, of the advantages of having buildings designed only by competent architects, we are not so sure as we would like to be that the measure proposed would infallibly eliminate the quacks from the profession, or prevent unscrupulous builders from erecting dangerous structures. In fact, even under the present system, it is not often the architect or his plans which are responsible for disasters to buildings. If all structures were required, under heavy penalties, to be carried out in strict accordance with the plans, and under the direction of any architect now practising in New York, whether licensed or unlicensed, there would be few accidents; but where, as too frequently happens, the builder disregards plans and directions, and, with the favour of the inspectors, makes his walls of such dimensions, and of such materials, as he sees fit, no licensing system applied to architects can prevent an occasional catastrophe. Where, also, as under the Illinois law, the licensing system practically shuts out all but Illinois architects from practising within the State, we are of opinion that it does no good to art or to professional advancement. While we favour local development in all the arts, it is not promoted by having the local artists shut out everybody else from their territory, and sit down comfortably to enjoy their monopoly, and it is very likely that the New York architects, being not only residents of the most cosmopolitan of all cities, but sincerely and intelligently devoted to the best interests of their profession, will recognise this, and provide for the employment of outside architects under the smallest practicable restrictions.

A CURIOUS carved stone in Panyer Alley, between Newgate Street and Paternoster Row, marks what is supposed to be the highest ground in the City. It is built into two stones at the corner of the alley, and represents a naked boy sitting on a pannier, beneath which is the inscription, "When ye have sought the Citty round, yet still this is the highest ground, August the 27, 1688." The houses bearing this interesting historical landmark are being pulled down, but the "naked boy" will be preserved.

THE Lancashire and Cheshire Antiquarian Society held their annual meeting on the 25th ult., Professor Boyd Dawkins presiding. Mr. G. C. Yates (hon. secretary) read the annual report, which congratulated the members upon the continued activity of the society, as evinced both in archæological work and in the attendances at the winter and summer meetings. Twenty-five new members had been elected during the year, and nineteen, including two life members, had been lost by death, resignation, and other causes. The total membership of the society was now 346. The financial statement was submitted by Mr. W. Harrison, the treasurer, and, together with the report, was adopted. Professor Boyd Dawkins was re-elected president of the society, and the following gentlemen were appointed vice-presidents :—Lieutenant-Colonel Fishwick, Mr. W. E. A. Axon, the Rev. E. F. Letts, Dr. Renaud, Mr. J. H. Nicholson, and Mr. C. W. Sutton. The members of the council were re-elected, and Mr. W. Harrison and Mr. G. C. Yates were reappointed treasurer and honorary secretary respectively.

A DEPUTATION of members of the Parliamentary Committee of the Irish Trades Congress waited upon the Right Hon. George Wyndham, Chief Secretary for Ireland, in Dublin, on the 23rd ult., to urge his support of the aims of the Congress, including the registration of plumbers under statutory powers. In the course of a sympathetic reply, Mr. Wyndham expressed his sense of the importance of plumbers' work, and his opinion that a number of deaths and a great deal of disease were attributable to defective sanitation and to bad work by incompetent plumbers.

THE West Central London Railway Company were summoned last week at the West London Police Court in respect of a nuisance caused by the issuing of black smoke from the shafts of the electrical generating station, Wood Lane, Shepherd's Bush. Mr. Bodmin, who supported the summonses on behalf of the Hammersmith Borough Council, said that the summonses were for December 14th and January 1st, 7th, 10th, and 20th. On each of those days a very considerable nuisance was noticed, both shafts for long periods emitting dense black smoke. Sanitary Inspector Brown gave an account of his visit to the works, and an inspector of the Smoke Abatement Association also gave evidence as to the density of the smoke emitted, whilst two inhabitants complained of the nuisance. Evidence was given on behalf of the company showing that the best appliances known to engineers were constructed, and that grey smoke would be mistaken for black. The number of economisers in the flues would prevent the issuing of black smoke. Mr. Rose said he was satisfied that the best appliances were used, but he was

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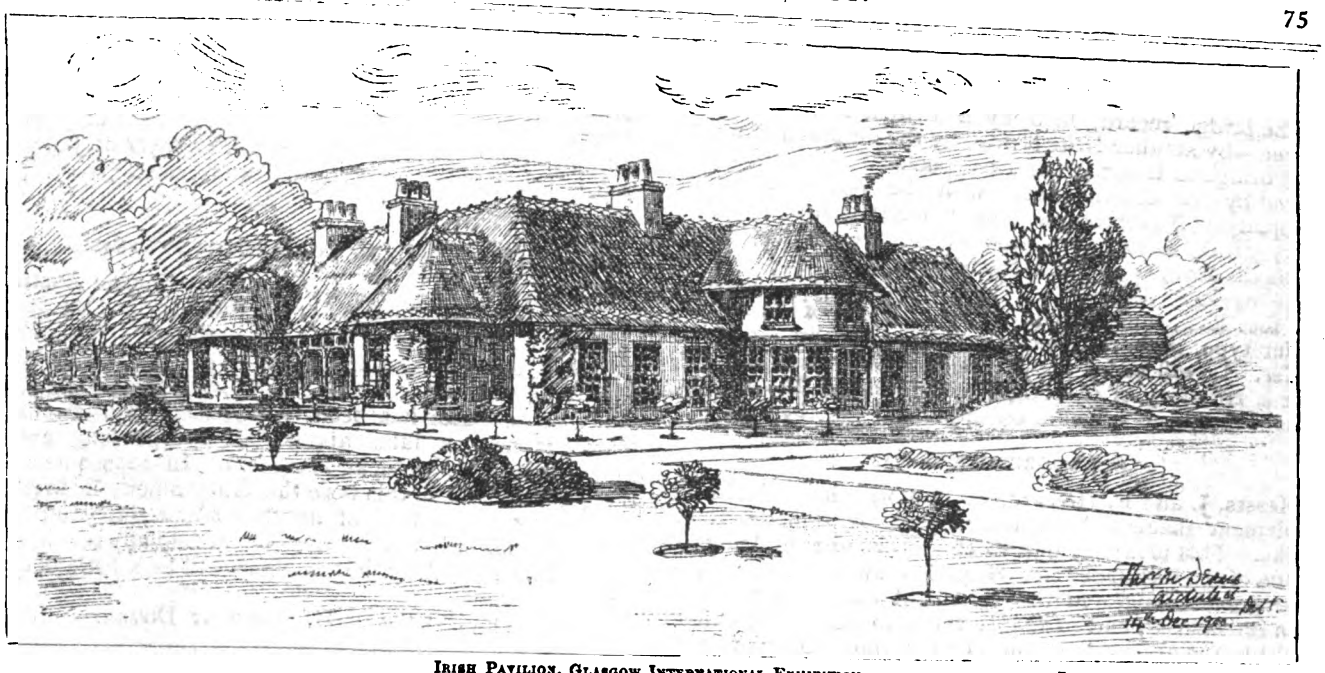

IRISH PAVILION, GLASGOW INTERNATIONAL EXHIBITION.
Thos. Manley Deane, M.A., Dublin, Architect.

not satisfied that the best kind of coal was used on some occasions. It would be sufficient to impose a fine of £5 on each summons, in all £25, with two guineas costs. The payment of the money stood over pending the application for a special case.

WE illustrate herewith the Irish Pavilion which is being erected at the Glasgow International Exhibition, from the design of Mr. Thomas N. Deane, of Dublin. It is an admirably typical design of what might be well adapted for the purposes of a small country hotel throughout Ireland, and we are not surprised to learn that the design has received the cordial approval of the Department of Agriculture and Technical Instruction for Ireland, for whose use it has been designed. The building, which is to house a representative selection of the products of Irish industries, will have its external walls rough cast and covered with lattice. The roof will be thatched with straw, with ornamental latting pegged on at the ridges and eaves. The contract for its erection has been placed with Messrs. W. Shaw & Son, of Glasgow (who are also the contractors for the main Exhibition buildings), and the work is to be completed by March 25th.

MANY inquiries having reached the offices of the British Fire Prevention Committee whether further important conflagrations abroad could not be made the subject of special publications, or papers, in the same way as the Charity Bazaar Fire at Paris, and the Horne Building Fire at Pittsburg, U.S.A., have already been dealt with, the executive have decided to issue authentic illustrated descriptions of the Comedie Francais Fire at Paris, and the Windsor Hotel Fire at New York, in respect to which valuable notes and photographs have for some time been in their possession. Both descriptions will be issued during the spring, and as only a limited edition will be printed for members of the committee and the public authorities, non-members requiring copies should apply at once to the Assistant Secretary, 1, Waterloo Place, Pall Mall, S.W.

A RETURN has been issued by the Home Office of the number of fatal accidents in mines and quarries in the year 1900. It shows that in mines under the Coal Mines Regulation Act there were 960 accidents, causing 1,011 deaths, as compared with 868 and 916 deaths in 1899. Of the total number of accidents, 482, or over 50 per cent., were due to falls of ground, and 495 lives were lost through this cause. In mines under the Metalliferous Mines Regulation Act the accidents numbered 37, and 38 lives were lost, as compared with 47 accidents and 56 deaths in 1899. Ten of the accidents, each causing one death, occurred in the South-western district. There were 122 accidents in quarries, and 125 lives were lost, 18 of the accidents and 19 of the deaths being in the South-western district.

ENGINEERING AND SANITARY NOTES.

By CHAS. E. GRITTON, A.M.I.C.E.

TWO OLD CHURCHES.

LAST Saturday I went over the remaining portion of the grand old church at Winchelsea, with its fine king post roof, noble tombs, recumbent crusaders, and beautiful Early English windows, containing tracery unique, I believe, in that its curious and beautiful lines are nowhere else found. Afterwards I paid a hurried visit to Rye Church and saw the curious old clock, with its long pendulum swinging right down in the church. It is said, I know not with what truth, that when this was put up the names of the then churchwardens were inscribed, as well as the words *tempus fugit*. A local worthy on coming to see the new sight exclaimed, "I know Tom Burnham and Dick Smith, but who may this *Tempuce Fuggett* be?" This quaint old clock was described and illustrated in the *English Illustrated Magazine* a month ago, so that those who cannot visit the original may use its counterfeit presentment there

FORESIGHT.

Messrs. Anderson & Anderson, of 37, Queen Victoria Street, E.C., send me among other things particulars of their "Varsity" patent Home Golfer. As the Morris tube is to the rifle, so this is intended to afford practice to the golfing enthusiast—and what golfer is not, when cruelly separated from his beloved downs? It is certainly ingenious, but as I have not yet added golfing to my other weaknesses, I cannot speak as an expert.

NEW LIGHT.

The *New York Herald* is responsible for the following: Tesla's oscillator, which is employed in producing the new light, causes electric vibrations of inconceivable speed. These vibrations turn the atoms of the gases in the tubes into so many little comets, which shoot through enclosed space with tremendous rapidity, leaving trains of light behind. This sudden starting and stopping of the current produces continuous light, not of incandescent or arc-light character, but purely solar. In other words, each little lamp is a little sun. Rectangular glass tubes form the lamps, and the light is said to be perfectly steady, and to most resemble sunlight.

SNOW, BEAUTIFUL SNOW!

The Hampstead Town Council are determined to find out the best way of clearing streets of snow. The town clerk has been instructed to inquire what arrangements are made for clearing away snow in large provincial towns and the result thereof. Mr. W. R. Rider, chairman of the Works Committee, and Mr. Arnold White have also been deputed to make similar inquiries in the United States and Canada.

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WORLD'S BRIDGE-BUILDING RECORD.

The bridge record, held by a British firm, has been beaten—by another British firm, by the despatch of a new steel bridge to Lagos, from Liverpool. The contract was placed by the Crown agents with the Widnes Foundry Company on November 10th, and in nine weeks every span, every girder, was ready. This eclipses the record of the Midlands firm, which constructed the Tugela bridge, by three weeks. The bridge, which is entirely of steel, is 520 feet long, and built in six spans, three of the lattice-girder type, each 100 feet in length, and three of web girder. It will carry the Lagos and Coomassie Railway over a tributary of the Niger at Abeokuta. In addition, a footbridge runs parallel on either side of the rail.

A PROGRESSIVE FIRM.

Messrs. J. and F. Howard, of Bedford, the agricultural implement makers, have determined to remodel their works. This is largely due to the recent visit to America of one of the partners, Mr. Harold Howard, since which time great changes in the system of manufacture have been introduced, and to enable them to adapt the entire works to the altered conditions of the times the firm have arranged for taking out the whole of their present system of driving, and putting in a complete system of electric transmission with the most economical form of generating plant and motors on the continuous-current system. The contract has been given to Messrs. W. H. Allen, Son & Co., Limited, of the same town.

"A LIBEL ON AMERICAN BRIDGE WORK."

In a furious letter, with the above title, to the *Engineering News*, Mr. Charles Jay Seiliert attacks Sir Alfred Hickman, M.P., for contrasting British and American bridge work in a way *not* flattering to the latter. From this letter I extract the following gem: "Coming back to bridges again, I wish to say that every railroad bridge over the Thames at London is in a disgraceful condition, and none of them seem to be on speaking terms with a good coat of paint. An English engineer informed me that the Tay Bridge blew down because it was 50 per cent. rust; and if its condition was equal to that of some of the L. C. and D. spans I do not doubt it." Such unkind remarks will not apply in future to our bridges in India or Assam, as the Indian Office have determined to use "Carbonizing Coating," which, although invented over here, is now made in America! It is also used in Burma and the Straits Settlements.

BIRMINGHAM IMPROVEMENTS.

The Estates Committee of the Birmingham City Council, at a meeting lately, had under consideration an important matter with regard to the Birmingham improvement scheme. So far the scheme has remained uncompleted. The original proposal was to carry Corporation Street straight through from New Street to Aston Road, but the new thoroughfare was stopped at the junction of Stafford Street and Aston Street, and in this state it has remained. The committee now proposes to take the opinion of the Council whether it shall finish the work, and thus complete the scheme.

NEW RAILWAY FOR QUEENSLAND.

The plans of an important new line of railway have been put before the Queensland Parliament. This is the Gladstone to Rockhampton line, which, when constructed, will allow of through passenger traffic right from Adelaide, in South Australia, to Rockhampton, in Central Queensland, a distance of 2,200 miles. The length of the line to construct is about 67 miles, and the estimated cost £358,443, or at the rate of £5,350 per mile. It will connect the two most important railway systems in the colony, embracing 1,523 miles in the southern system, and 591 in the central, or 2,114 miles out of a total of 2,801 at present open for traffic in Queensland.

PAPER AS A SUBSTITUTE FOR RUBBER.

In view of the increasing demand that the world's industries now make on the supply of rubber, a Swedish firm, it is said, have succeeded in producing a material which can be utilised as a substitute. The new material is said to be produced by covering sheets of the finest Japanese rice paper with a thin layer of a fine varnish. They are then placed on top of one another, and, through the adhesiveness of the varnish, the sheets of paper are converted into one homegeneous mass. After undergoing pressure, the outside is covered with a layer of Japanese cork. The finished product is flexible, elastic, very light, and completely air and water-tight.

ARTESIAN BORING IN CENTRAL AUSTRALIA.

The great value of artesian boring in Central Australia has just been proved by the successful result of operations at Anacoora, about fifty miles east of Charlotte Waters. After boring to a depth of 1,250 ft. a daily supply of 700,000 gallons of water has been obtained, and a dry district has been transformed into an oasis. There is now a lake about half-a-mile long and a quarter-of-a-mile wide at Anacoora. In consequence of the great success of this bore the Government is inviting tenders for the sinking of another about thirty miles to the north-east, where the prospects are equally favourable, except that it is likely that the bore will be a little deeper.

THE NATIONAL HARBOUR AT DOVER.

The new sea wall from the East Cliff Jetty to the shore end of the eastern arm, a distance of 3,850 ft., is now completed. The pier just commenced will be 3,320 ft. in length, entirely constructed of 40-ton concrete blocks. As a preliminary to the work a substantially-erected temporary pier has been run out from Langdon Gap, where the east pier commences, and this is now 700 ft. long. On it are three enormous Goliath cranes and a powerful travelling derrick. Excellent progress is being made on all sections of the National Harbour Works. The fourth year of the contract has now been entered.

HASKINIZED WOOD.

A short but interesting account of this process, with a view of deals being placed in the huge cylinders of the Haskin Wood Vulcanising Company's Works at Millwall, was given in last week's *Public Health Engineer*. Those desiring fuller particulars should visit or write to the offices, 2, Dean's Yard, S.W.

OUR ILLUSTRATIONS.

NORTH DOWNS GOLF PAVILION, WOLDINGHAM, SURREY.

PROBABLY the highest golf course in England is that of the North Downs Golf Club, which is situated at a level of some 850 ft. above the sea. It is certainly one of the most charming as regards the purity of its atmosphere and its magnificent outlook in all directions, the view seawards covering some 30 miles of country. In order to make the course more convenient and agreeable for members a comfortable little pavilion has been erected some 35 ft. in length. The arrangement, which is suggested by the sketch-plan, aims at making the saloon as comfortable and free of draught as possible, with a cosy ingle nook. The gentlemen's dressing-room, therefore, opens direct from outside, and the service from the kitchen is through a small ante-room. A very pleasant effect is obtained inside by the staining of the woodwork throughout with Mander's greenheart stain. A continuous range of lead light windows by Pearce, of Manchester, runs round the two outer walls of the saloon. Under these windows is a continuous fixed seat, under which are lockers with hinged lids, and the same form of seating applies to the ingle nook. The fireplace is built of red brick, and the hearth is laid with Van Straaten's green-glazed Dutch tiles. Exteriorly the pavilion is painted white, and has a red tile roof.

We have not yet seen a golf pavilion with decorative paintings, but this little pavilion is already adorned by six of these, designed and painted by two honorary members of the club, Messrs. Trudinger and Baur, both of Basle, Switzerland. These little paintings are admirable both in form, arrangement, and colour, and stand out with capital effect in their setting of green-stained woodwork. The

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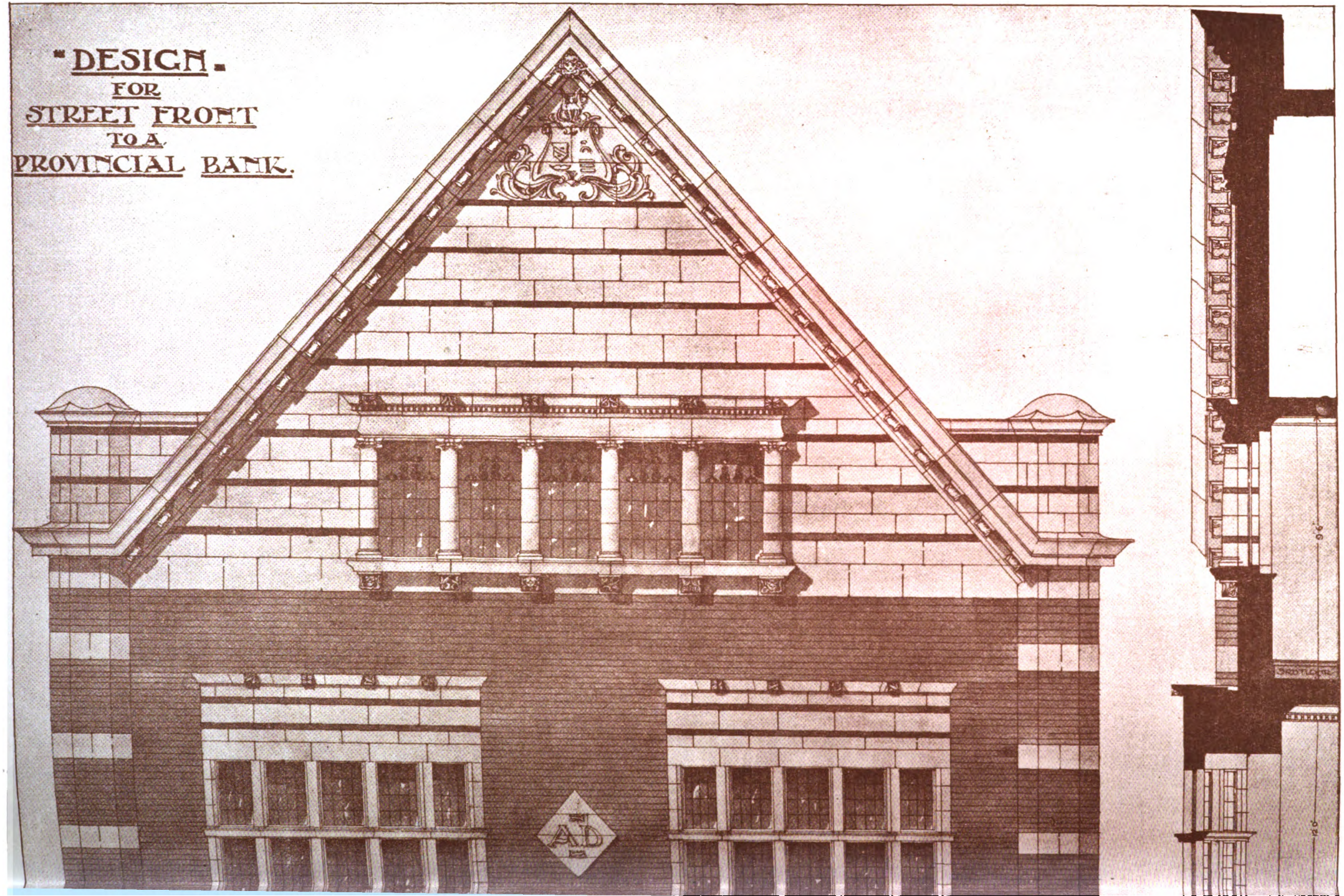
"DESIGN.
FOR
STREET FRONT
TO A
PROVINCIAL BANK.



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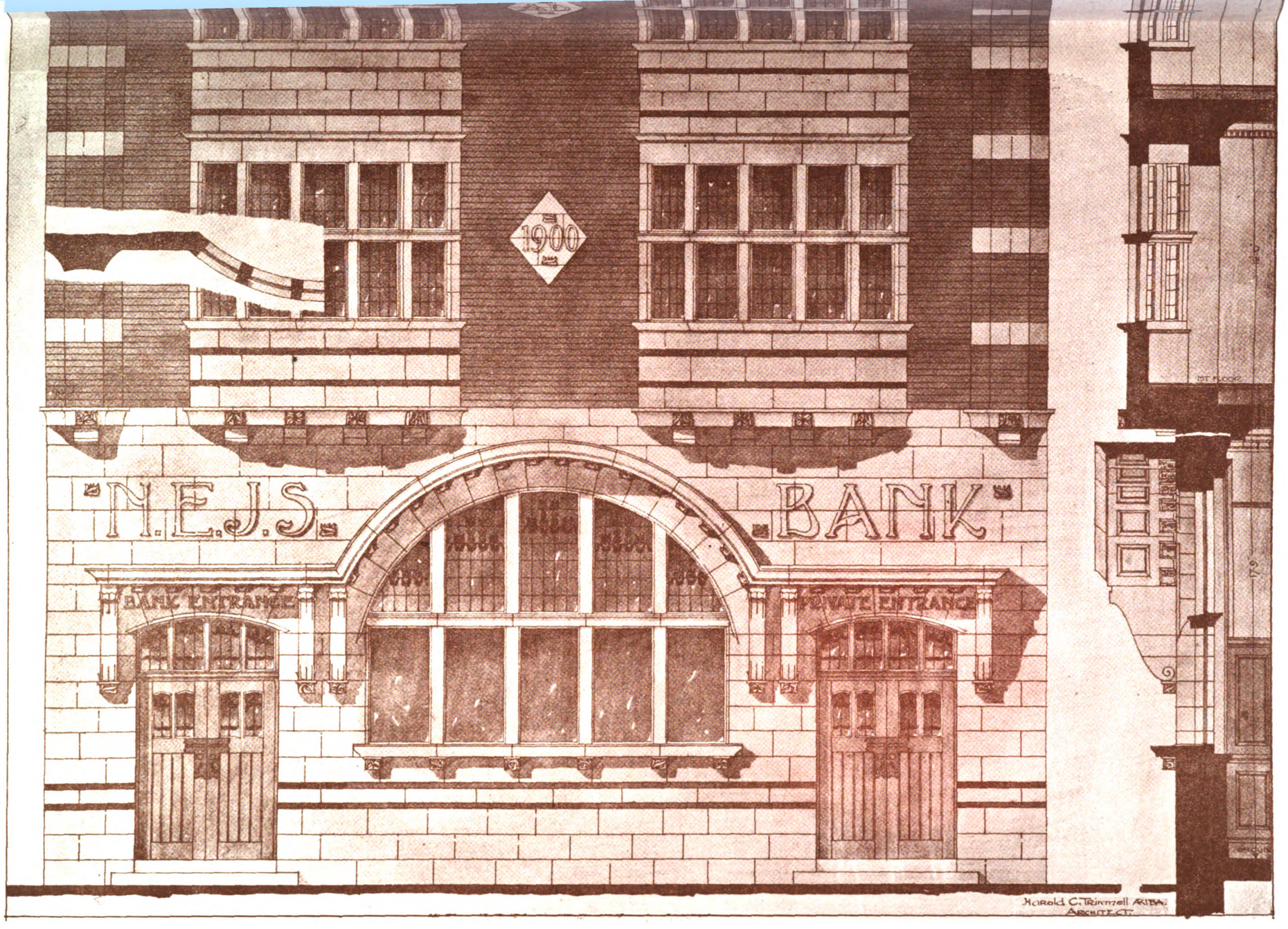

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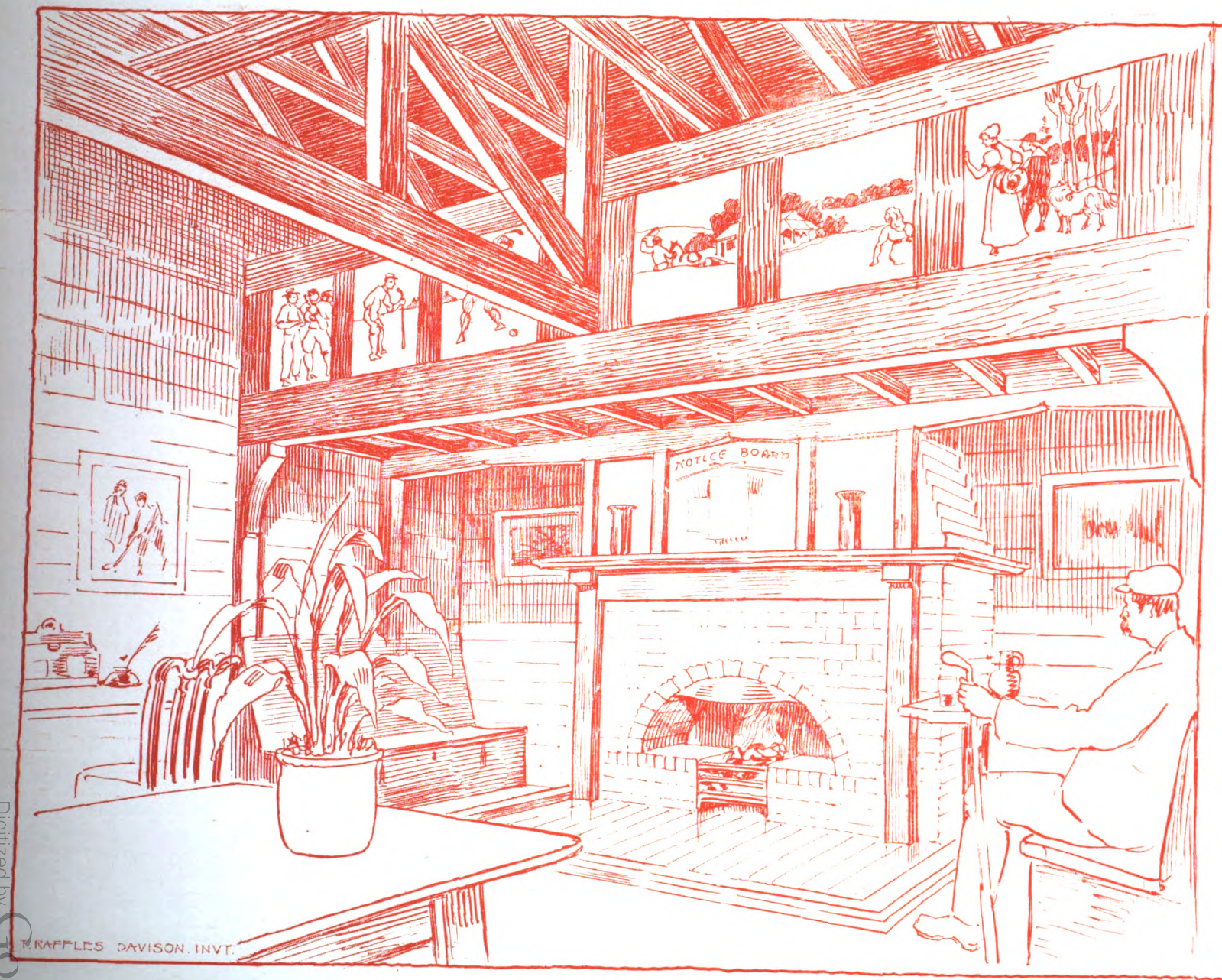

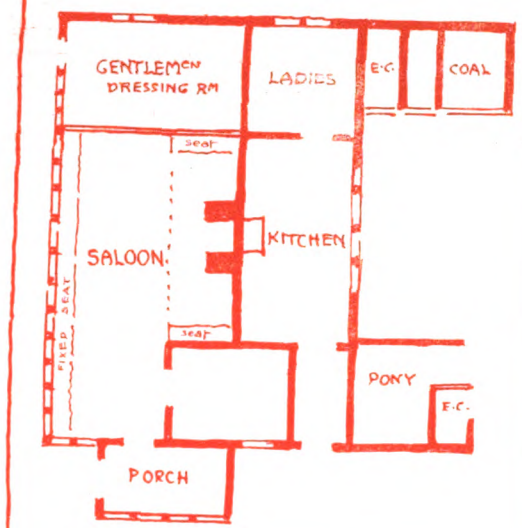

RAMBLING SKETCHES by T. RAFFLES DAVISON Nº 1313

THE BRITISH ARCHITECT, FEBRUARY 1ST 1901 COPYRIGHT.

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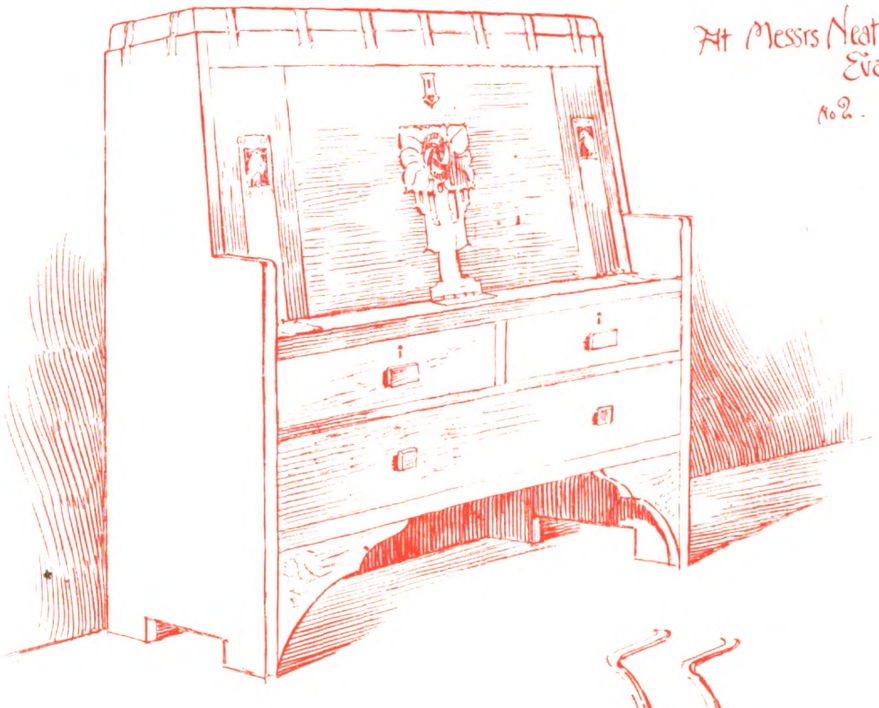
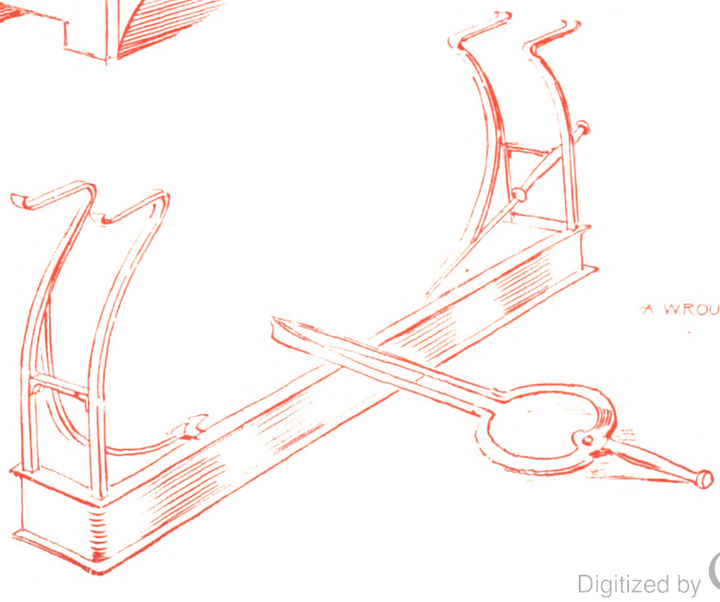
A DECORATED DOOR.



At Messrs Neatby Evans & Co's No 2.

A BUREAU COPPER HINGES WOOD KNOBS.



A WROUGHT IRON FENDER

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subject is a continuous one, running through all the panels, and represents the pavilion in its local setting, with some of its habitués, including Mr. Robert Barr, the well-known author, and also the Club's white pony. Several architects are members of the club, which makes an excellent rendezvous for golf, some 17 miles from London, in one of the yet unspoilt corners of Surrey.

A club-house like this can be erected for some £250, and is doubtless a great advantage to a course situated, as this is, right away in the country. In the erection of this pavilion much was due to the efforts of individual members, two of whom took the responsible position of contractors, and another that of architect.

AT NEATBY, EVANS & CO.'S.—II.

WE continue our illustrations of this interesting and original work.

DESIGN FOR A STREET FRONT TO A PROVINCIAL BANK.

HAROLD C. TRIMNELL, A.R.I.B.A., ARCHITECT.

THIS illustration shows an excellent design for a provincial bank frontage, designed by Mr. Harold C. Trimnell, A.R.I.B.A.

GLASGOW ROYAL INFIRMARY COMPETITION.

THE Glasgow Institute of Architects have addressed the following letter to the chairman and managers of the Glasgow Royal Infirmary respecting the awards in the recent competition:—

"Gentlemen,—Recognising it to be your earnest desire that the Infirmary, when reconstructed, should conform to the most modern standards of design in this class of building, and that the subscribers and the general public have a right to expect this, we, the Glasgow Institute of Architects, as a body of technical experts in such matters, feel it to be our duty to state that, in our opinion, this result will not be achieved if the reconstruction is proceeded with according to the plans selected by your sub-committee in the recent competition.

"We attribute this failure not to any lack of zeal on the part of your committee, or of ability on the part of the competing architects, but mainly to the manner in which the competition was initiated and carried through, and that in the following respects among others:—

"I.—That along with the printed conditions provided for the competition there were issued two sets of sketch plans as indicative of alternative arrangements which the sub-committee recommended, and which were stated in the accompanying report to be drawn by or under the direction of two members of the sub-committee respectively.

"II.—That a Jubilee block to be situated on a particular part of the site was insisted upon as an integral part of the scheme.

"The results of these elements in the conditions were:—

'(*a*) That the competitors and the assessor were hampered in the exercise of their individual judgment as to the main points of importance in such a building, viz., the distribution of the various buildings with respect to each other for convenience of working and of all for the freest access of sun and air.

'(*b*) That the competitors were placed in the invidious position that, in the event of the schemes recommended by the committee not proving themselves to be in accord with their judgment and experience, they were bound, in departing from them, to meet with disfavour from those influential members of the committee who would enter upon the examination of all the plans with minds necessarily biassed in favour of those which they themselves had put forward, while reserving their position as judges.

'(*c*) That as the result, the proposal that plan E be accepted, which became the finding of the meeting, was moved by the gentleman who was actually the author of the scheme which was adopted and worked out in detail by this competitor.'

"III.—That neither of the sketch plans issued are in accord with the present-day principles of hospital design, as might indeed be expected, seeing that their authors have not enjoyed the training which would qualify them as surgical, medical, or architectural experts; that, in fact, the plans are in many vital particulars inadequate and out of date, and that these faults are naturally displayed equally in the selected design, which is but an elaboration of one of them. A corroboration of this assertion with regard to the radical faultiness of the plans in question is furnished by the fact that six out of the ten competing architects found it necessary, in spite of risk of possible consequences already alluded to, to entirely throw over the schemes furnished to them, and that among this number are found all the four architects from outside of Glasgow (two from London and two from Edinburgh), who were presumably invited specially on account of their knowledge of hospital design.

"Such being the opinion of the Institute after a very mature and careful consideration of the whole subject, we would most earnestly urge the managers, before committing themselves and the public to the erection of any portion of the building, as designed, to have the plans submitted to one or more independent hospital authorities of recognised and outstanding position, for consideration and report.

"Apart from the all-important question of the erection with the public funds of an entirely adequate and modern hospital, we, the Institute of Architects, feel it necessary to lodge a protest against the setting aside by the sub-committee, without any reason given, of the award of the professional assessor, Dr. Rowand Anderson—the more so that a simple majority of one was considered sufficient to overturn his judgment—as liable to prejudice the success, alike for promoters and architects, of future competitions in Glasgow. And we have further to state, that the erection of a Jubilee block, such as is proposed, seven storeys high, and in the position selected, will, if proceeded with, dwarf and irretrievably injure for all time the external appearance of the cathedral. The foregoing statements represent the unanimous finding of the Glasgow Institute of Architects, at a meeting specially called to consider a report of the council on the question, and as the matter is not only one of the greatest public importance, but of extreme urgency, owing to the proposal of your sub-committee to proceed at once with the erection of the northern block, it has been communicated to the public press at the same time as it is submitted, with our earnest prayer for its consideration, to yourselves.

"In name and on behalf of the Glasgow Institute of Architects,

"C. J. MACLEAN, Secretary.

"115, St. Vincent Street, Glasgow,
"January 21st, 1901."

PROPOSED ARCHITECTS' REGISTRATION LAW FOR NEW YORK STATE.*

SECTION 1. The people of the State of New York, represented in Senate and Assembly, do enact as follows:—Within sixty days after the passage of this act, the Governor of the State of New York shall appoint nine persons to constitute the New York State Board of Architects. The nine members of the State Board of Architects first appointed by the Governor shall divide themselves by lot into three classes of three members each. The first class shall serve for three years, the second class for two years, and the third class for one year from the date of their appointment, and thereafter there shall be appointed by the Governor, each year, three persons to serve three years to supply the place of the class retiring. Appointments necessary to fill vacancies which may occur in any of the classes shall be made by the Governor within 60 days after the vacancy has occurred. All appointments shall be made in writing and shall be filed with the Secretary of State. The members of the Board shall serve

* This proposed Act to regulate the practice of architecture in New York State is quite likely, according to the *American Architect*, to become law.

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without compensation or reimbursement for their services and expenses except as hereinafter provided.

SEC. 2. The members of the New York State Board of Architects shall, before entering upon the discharge of their duties, take and file with the Secretary of State the constitutional oath of office. They shall annually elect from their number a president and a secretary, who shall also be treasurer, to hold office for one year.

SEC 3. The Board may adopt rules and regulations to govern their proceedings not inconsistent with this act. The Board may adopt a seal, and the secretary shall have the care and custody thereof, and shall keep a record of all proceedings of the Board, which shall be open to public examination.

SEC. 4. Six members of the Board shall constitute a quorum, but the Board may delegate the examination of applicants to a committee of less number to report the examination to the Board.

SEC. 5. Special meetings of the Board shall be called by the secretary upon the request of any two members by giving at least five days' written notice of the meeting to each member. The New York State Board of Architects, with the approval of the Governor of the State of New York, may adopt rules and regulations for the examination and registration of applicants for registration to practice architecture in accordance with the provisions of this Act, and may amend, modify, and repeal such rules and regulations from time to time.

SEC. 6. The Board shall immediately upon the election of each officer thereof, and upon the adoption, repeal, or modification of the rules and regulations for the registration of applications, file with the Secretary of State, and publish in at least two architectural journals, the name and post-office address of each officer, and a copy of such rules and regulations, or the amendment, repeal, or modification thereof.

SEC. 7. Provision shall be made by the State Board of Architects for holding examinations of applicants for registration to practice architecture at least once a year, if there shall be any application therefor, in each of the judicial departments of the State, and any person over 21 years of age, upon the payment of a fee of five dollars to the Board, shall be entitled to enter any examination appointed for determining the qualifications of such registration.

SEC. 8. If the examination of any applicant shall be satisfactory to a majority of the Board, a certificate shall be issued to the applicant authorising him to practice the profession of architecture, upon paymenf of an additional fee of 15 dollars. A person who shall at the time of the passage of this act be engaged in the practice of architecture in this State shall be entitled to registration without fee or examination, on presenting to the State Board of Architects an affidavit to that effect, or a certificate from a similarly constituted board in another State. Each person registered shall cause the same to be recorded in the clerk's office of the county of his residence, or, if a non-resident of the State, in the county of this State in which he shall have an office, and the clerk shall record the same upon payment to him of his fees at the same rate as for recording a deed. Upon every change of such residence or office from such county to another county in this State, the holder of such a license shall cause the same to be recorded in like manner in the clerk's office of the county to which such residence or office shall be changed.

SEC. 9. The Board shall keep on file in the office of the Secretary of State a correct list of all registered architects. Any certificate of registration so granted or obtained by affidavit may be revoked by the State Board of Architects for gross ignorance, recklessness, or dishonest practices of the holder thereof, but before any certificate shall be revoked such holder shall be entitled to at least 20 days' notice of the charge against him, and of the time and place within the county of his residence of the meeting of the Board for hearing and determining of such charge.

SEC. 10. For such purpose the Board shall have the
wers of a court of record, sitting in the county in which
eir meeting shall be held, and to issue subpœnas and to compel the attendance and testimony of witnesses. Witnesses shall be entitled to the same fees as witnesses in a court of record, to be paid in like manner.

SEC. 11. The accused shall be entitled to the subpœna of the Board for his witnesses, and a reasonable opportunity to produce his witnesses before them and to be heard in person or by counsel in open public trial; and no certificate shall be revoked except upon the unanimous vote of all members of the Board. If a person shall pursue the practice of architecture in this State, or shall engage in this State in the business of preparing plans, specifications, and preliminary data for the erection or alteration of buildings, or shall advertise or put out any sign, card, or drawing designating himself as an architect, having an office or doing business within this State, without a registration therefor, in accordance with the provisions of this Act, he shall be guilty of a misdemeanour, and, upon conviction, shall be fined not less than 50 dollars, nor more than 500 dollars.

SEC. 12. But nothing herein contained shall be constructed to prohibit any person in this State from acting as designer of his own building, or as designer for any person employing him with full knowledge on the part of such employer that the person so employed is not a registered architect in accordance with this Act; nor to prohibit architects residing in other States, and not having an office or carrying on a general business in this State, acting as architect for any building, or from visiting the State for such purpose in person; nor to prohibit students or employés of registered architects from acting for or upon the authority of such architects.

SEC. 13. The registration fees received by the Board may be expended for the payment of the travelling and other expenses of the members of the Board.

SEC. 14. An itemized account of such receipts and expenditures shall be kept by the Secretary of the Board, and a report thereof for each year ending with the thirtieth day of September, duly verified by the affidavit of the Secretary of the Board, shall be filed with the Secretary of the State within sixty days thereafter.

SEC. 15. Any surplus of such fees exceeding 500 dollars shall be paid annually by the Board to the Treasurer of the State.

SEC. 16. This Act shall take effect immediately.

ON FLATS.*

BY EDWIN T. HALL.

(*Continued from page* 68.)

THE BLOCK PLAN.

FIRST of all, do not crowd too much building on your land. Doubtless a site that is crowded will show a large rent-roll on paper, but the building will not in the end be so popular as an open and more airy and consequently more healthy block, and the rents of the former will have to be reduced.

Of course, the shape and extent of the site will largely determine the block plan, but for our purpose we will assume a considerable area to be at our disposal. It may be laid out with a large carriage quadrangle in the centre, as in the examples on the screen of (1) No. 87, Boulevard St. Michael, or (2) No. 32, Rue la Boëtie, both belonging to Le Nord Assurance Company, the architect being M. M. J. Nerot. In these the entrances are from the courtyards.

In Mr. C. J. Pawley's St. James' Court, Westminster, we get one large courtyard with a narrow roadway on each side leading to it behind and through the front block.

Another type is where the main entrances are from the roadways, as, for example, Der Habighof, Vienna. Herr H. Adams, architect.

Here we have as characteristics two blocks parallel to the Haupstrasse and one facing the side street. The internal courtyards are used merely for light and air. There is a third method, as at St. Ermin's, Westminster, where the buildings are U-shaped, the large central quadrangle being open to the south or main front. This open quad may, however, be at the back if the aspect is more suitable at that side.

This third method is shown in Mr. Paul Hoffmann's recent buildings, 171-5, Queen's Gate.

The enclosed quadrangles permit of more land being

* Extracts from a paper read before the Architectural Association on Friday evening, the 18th ult.

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covered than where the fourth side is left open, but the latter scheme has many other advantages.

Even, however, on a comparatively small site a very pretty effect may be obtained by having a central circular carriage court, partially glass roofed, over the ground floor, the area above being open for lighting and ventilating the staircase and rooms. An example of this may be seen on the walls.

INTERNAL PLANNING.

Coming to a consideration of the internal planning of the buildings, I think a good public entrance hall on the ground floor is a *sine qua non*. The porch and vestibule should be simple, and may be plain. The hall should be spacious: not a mere passage, but a good room, well lighted, the walls panelled in wood to a considerable height, having a large, hospitable fire, and a panelled ceiling. Personally, I do not like the "gorgonzola" and other marble wall effects which are so frequently seen in modern blocks. They are not, I think, in harmony with essentially domestic buildings, and I prefer the more cosy effect of a good hall in a country house. Of course, columns may enter into the composition with great advantage, and any scheme of colour.

The position of the staircase must, of course, be governed by the shape of the site, but if it can be made a part of the hall scheme so much the better, as it produces an effect of spaciousness which is valuable.

I would draw attention to the very general feature abroad of staircases planned as semi-circles, ellipses, or on other curved lines. The result is very pleasing, and contrasts favourably with the straight flights of stairs in a rectangular space so frequently seen.

I do not like curved flights of stairs to extend without any intermediate landing, from floor to floor. These appear to me rather monotonous, as well as tiring and dangerous. They are, however, common in Paris.

I think the best planning, internally, is where on each floor there is but one flat off a main staircase. Such a flat is more private, and gives an idea of not being limited by its neighbour. There may, of course, even with this arrangement be several staircases within the building itself, and several flats on a floor. Of course, "the one staircase one flat" idea would only be practicable when the flats were of considerable size. When there are family suites, each of but five or six rooms, one staircase may reasonably serve two suites on each floor. This gives a certain elasticity to the place, as two small suites may then be combined and let as one large one. In high buildings I think it is not desirable to have a greater number of flats on a floor to one staircase.

The planning of a flat itself is an interesting problem, one requiring great thought. First, there should be a good and well-lighted hall, or ante-chamber. The reception-rooms should be readily accessible from this, the bedrooms more retired, and the offices out of sight, but handy for service to the principal rooms and to trade access.

Efforts should be made to get away from a mere narrow passage hall, and to adopt some more compact plan. An octagon or a circle, a hexagon or an ellipse, will form pleasing forms, and all admit of decorative treatments. A good example of an octagon treatment may be seen in M. Nerrot's building in the Rue la Boëtie, and there is another at No. 42, Avenue Henri Martin. The rooms, too, even in rectangular sites, need not all be square or rectangular.

As to height of rooms, it appears to be very general to adopt about 10 to 11 ft. in clear in all three capitals. I think this ample for moderate-sized rooms; a greater height makes them appear smaller in area.

Windows should be ample, especially in a city, and I would draw your attention to the large size of doorways in the Parisian examples. Passages should be light, and the more direct the better. Do not forget to provide ample cupboards.

Baths, sinks, water-closets, etc., should not be all over the place, but, within reason, grouped near together.

On the subject of planning, I would sum up shortly by saying, make your plans interesting, bright, and above all study to make them simple, the simpler the better. You may be sure if you see an intricate plan it is ill-digested, inconvenient, and generally not so well lighted or ventilated as it should be.

We have hitherto considered only large sites, but there are a greater number of small sites which have to be treated, and I would refer to Baron Max Ferstel's design of a house in the Stammgasse, Vienna. It is six stories in height, the top floor containing studios. The other floors contain each a flat with five rooms, in addition to a kitchen with servant's bedroom attached and a larder. Here the two nurseries are placed at the rear, with separate service from the kitchen. There is also an access from the living-room to these children's rooms, so that the mother has a ready control. The bath-room and water-closet are ventilated into a small area, but the bath-room is only apparently accessible from the living-room, which appears to me to be an undesirable feature.

In London, Mr. John Slater's corner of Mortimer Street is convenient and well lighted. In Palace Chambers, Buckingham Gate, Messrs. Martin & Purchase have an angle site which appears to have required considerable thought to evolve a plan to give good light to all the apartments. Perhaps it may be permissible to mention one of my own buildings with a rather awkward site. It is a quadrant on plan at the corner of Sloane Gardens, and is shown on the screen.

Among the plans of bachelor suites we have one of Mr. John Slater's for a very shallow site in Well Street. He puts two suites to a floor off each staircase, and also, in addition to a parlour or sitting-room, two bedrooms, and a bath-room with water-closet in it, gives a small kitchen. The whole forms a very small self-contained residence, to be let at a low rent. Mr. Paul Hoffmann, in Harewood Place and Hanover Square, has one staircase, a corridor common to several suites, each containing an entrance-lobby, a sitting-room, bedroom, bath-room, and water-closet, but the two end suites can be combined to make a family suite.

THE EARTHWORKS AND CASTLES OF EARLY ENGLAND.

AT the London Institution, on Monday evening last, Mr. Elliot Malden gave an illustrated lecture on "Earthworks and Castles of Early England."

In commencing his address, Mr. Malden called attention to the fact that there were very many different ways in which history had been approached in the later ages, but in no way more conspicuously successful than in the study of past times through their material remains. These remains had a special advantage over written work. Amongst the remains which past days had left were fortifications, fortified houses, military posts, and camps of refuge. Ecclesiastical architecture presented certain easily recognisable forms which were readily assignable to particular ages; but an ordinary man had not the slightest notion whether the Tower of London, or Arundel Castle, or the Round Tower of Windsor was likely to be the older; and had not the smallest notion why the Round Tower was round, or the Tower of London square.

There were two great uses for the military remains of the past—either for shelter or for some considerable collection of people and their flocks and herds, or else they were erected, for purely military reasons, for the command of the country. Posts on the top of a hill commanded distant views, but did not give the command of the country. This could only be obtained by means of a garrison; and a hill was out of place for them. The country could only be commanded by occupying the passes, fords and bridges. By such places camps were constructed, so that the garrison could sally out and command the country where other people must pass. For sheltering non-combatants the top of a hill was a useful place. The Roman camp was invariably rectangular in form, while that of the British was irregular in shape, following the contour of the ground on which it happened to be. Ancient British camps were surrounded by three banks and ditches, Roman camps by one wall and ditch. A British shelter camp was much larger than a Roman camp, and one which the lecturer showed covered an area of 11 acres. These camps were not permanent; the people did not live in them; and nine out of ten had no water in them. The remains of many different ages were found in these camps; flint im-

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plements had been dug up, and stone implements—remains which only belonged to a very primitive people. Pictures of British camps were thrown on the screen, including old Sarum and Castle Nadin.

With the West Saxons came the building of Burh's. These were common to Scandinavia and Low Germany. The Burh consisted of a mound surrounded by an earth wall defended with wooden palings, having a house in the centre.

Castles of masonry were very much later. William the Conqueror built similar castles in 1068; and they were constructed in a few days; while castles of stone took a very long period to build. There was one exception, he believed, at that early time, as Dover Castle was probably built of stone. There were no Norman stone castles in Normandy earlier than the time of William in England. The Normans enclosed the old British mound with a circular wall; one such castle was near the Severn, and other illustrations were seen in Arundel Castle, Sussex, Cardiff, and Lewes. Porchester Castle was square in form, and so was Rochester Keep, and these were of Roman origin. The Tower of London was the best known example of the Norman Tower and Keep. Guildford Castle was a Norman square tower erected on an artificial or British mound. Christ Church Castle, Hampshire, was constructed on an artificial mound. There were only three examples in England of a Norman Keep erected on an artificial mound. The alteration in the style of castle from the Norman Keep, with only one entrance and exit, to the concentric walls around the Castle, as at Beaumaris and Carnarvon, were shown. The residential castles were of a very different type. At Bramber Castle, Sussex, there were within the same area remains of the British castle—a mound, and the stone Keep of Norman times; while the barracks had been converted into a stable. The Tower of London presented to view a castle used for varying purposes at different times; the Norman Keep, with outworks, and still later additions, to bring them up to ths best type of castellated fortifications.

FAN TESTS.

THE following report on tests of Messrs. John Gibbs & Son's fans, by Dr. Hele-Shaw, F.R.S., M.Inst.C.E., Professor of Engineering, Liverpool University College, and Mr. Alfred Hay, B.Sc., M.I.E.E., Lecturer on Electro Technics, Liverpool University College, has been sent us:—"We have carried out a careful series of tests with two of Messrs. John Gibbs & Son's electric fans, one of which was a 24-in. fan, while the other, driven by a water-tight completely enclosed motor, was a 15-in. fan. The 24-in. fan (No. 205), when supplied at a potential difference of 100 volts, was found to take a current of 3·05 amperes, and to run at a speed of 655 revolutions per minute, delivering 5,100 cubic feet of air per minute. The temperature rise after 3½ hours' run was found to amount to only 23 degrees Fahrenheit. The same fan when fitted with a conical discharge-pipe tapered from 24 in. to 12 in., was found to take 3·2 amperes at a potential difference of 105 volts, discharging 1,360 cubic feet per minute. The pressure in the discharge pipe was found to exceed that of the atmosphere by an amount corresponding to a column of water ¼ in. high. The smaller fan, No. 247, was 15 in. in diameter, and was driven by a totally enclosed and completely water-proof electric motor. When supplied at a potential difference of 110 volts, the fan was found to run at a speed of 695 revolutions per minute, taking a current of one ampere, and giving a discharge of 1,160 cubic feet per minute. The temperature rise after three hours' run was found to be 50 degrees Fahrenheit, which is well within the limits of safety. The running of the 15-in. fan was remarkably smooth and silent. We consider the above results to be highly satisfactory. The mechanical construction of the fans is substantial, and the workmanship good.

"(Signed)

"ALFRED HAY, B.Sc., M.I.E.E.

"H. S. HELE-SHAW, F.R.S., M.Inst.CE."

TRADE NOTES.

MESSRS. WILLIAM POTTS & SONS, clock manufacturers, Guildford Street, Leeds, have just erected a new turret striking clock at Wykeham Church in Yorkshire, which strikes the hours on the large or tenor bell, and shows the time upon one large dial facing down the main street. The Right Hon. Viscount Downe is the donor of the clock. The tower is situated about 40 yards from the church, and formerly was used as a lock-up for prisoners, and is close to the Scarborough and Pickering highway. Messrs. Potts and Sons are also making a new quarter chime clock for the ancient parish church, Lastingham, on the North Yorkshire moors, for Mr. Pulleyn, Cliftonville, York, and a new clock with three large external dials for Scarborough.

SHIELDHILL SCHOOLS, in course of erection at Polmont Station, are being ventilated by means of Mackay's patent direct-acting turret ventilators and air inlet panels, supplied by Messrs. Cousland & Mackay, ventilating engineers, 150, Hope Street, Glasgow, the sole makers.

THE contract for interior fittings, finishings, staircases panelling, doors, flooring, and parquetry, including tiling to 14 bath-rooms, for a large house at Matlock Bridge, designed by Messrs. Stott & Sons, architects, Manchester, has been let to Messrs. Goodall, Lamb & Heighway, Limited, Lower Broughton, Manchester. The same firm have also secured the contract for the staircase and interior joiners' work for a house at Grimsby, designed by Mr. Geo. W. Davis, architect, Great Grimsby, for £633, the flooring and parquetry extra as per schedule. The fittings and interior joinery work for the Stockport Bank (Messrs. Booth & Chadwick, of Manchester, architects) are also to be carried out by Messrs. Goodall, Lamb and Heighway, Limited.

JOTTINGS.

THE Grimsby Sanitary Committee have decided to recommend the Town Council to undertake the removal of household refuse instead of getting the work done by contract as hitherto. It is suggested that a destructor be built at each end of the town to consume the combustible refuse, and the expenditure is estimated at £4,400.

AT South Shields a large new building is being erected for the local water company at the corner of Chapter Row and Market Square from the design of Mr. Henry Grieves A.R.I.B.A., of South Shields. The building is to cost between £7,000 and £8,000, and is arranged in two departments—one for public and private offices, and the other for workshops. A suite of dwelling rooms is arranged to occupy the top floor.

THE improvements which have been going on for some time in connection with St. Ninian's Cathedral, Perth, are drawing near a completion. The chancel has been remodelled, north and south aisles, divided by arches from the central part, have been added, while a screen between the vestries for the bishop, the clergy, and the choir has been erected, as well as a new organ chamber. The organ itself is to be renewed. A chapter house has been erected in memory of the late Bishop Wordsworth, to serve the double purpose of church meetings and a diocesan library. The vestries and the chapter houses are connected with the Cathedral by a new vestibule, which is in course o erection. The total cost will be somewhere abou £12,000.

WILLESDEN PAPER.
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The British Architect.

LONDON: FRIDAY, FEBRUARY 8, 1901.

THE APPRENTICESHIP QUESTION.

THE decadence of the apprenticeship system in not a few of the trades in this country has aroused the serious concern of those who have the commercial and industrial interests of the country at heart. Our concern in the matter takes, perhaps, somewhat higher ground than the question of mere trade prosperity. We realise the very great need there is for a more thorough and universal teaching and training of workmen in their several trades, if we are to have really high class skilled workmanship. Especially so is this the case in the building trades, in which apprenticeship in its proper and legitimate form has most seriously declined. Taking the proportion of apprentices to workmen in each of the building trades we shall find it lamentably small. Indeed, only some five years ago, special inquiry in regard to the building trades in London revealed the fact that out of some 12,000 workmen employed by 41 firms there were only about 80 apprentices and 140 learners, whereas it was calculated that 1,600 would have been nearer the usual proportional figure. Nor do we find any tendency to improve upon these figures during the past year or two.

It has been argued that the modern conditions of labour and employment are not favourable to the apprenticeship system. There is possibly some truth in this. In alluding to the subject the other day the *Times* remarked:—"Contrast the best workshop in, say, the sixteenth or seventeenth century with an establishment in which there is to-day the highest efficiency, in which self-acting tools are employed, and from which are turned out the best products of skill. The apprentice in old days lived in the house of his employer, who saw to his morals as well as his technical training. He sat at the same bench with his master, who could, while busy at his own work, cast from time to time a supervising glance at his pupil's and point out its defects, and drop an occasional word of monition. The whole scheme of the articles of apprenticeship presupposed a close personal relationship which cannot well exist in a workshop owned, it may be, by a company, divided, it is certain, into different departments, and conducted with efficiency and economy, mainly because each person knows his particular duties and meddles with no other."

No doubt the old condition of things favourable to the closer relationship between master and apprentice has passed away and is not likely to be revived. But though the time may be gone when the pupil could work at the same bench as his master, live in the same house, and be in all respects closely supervised and trained, both in regard to his morals and his trade, yet that is no reason why we should say goodbye to apprenticeship as a means of practical education and training. We think some way out of the difficulties which surround the question at the present day should be possible. Mr. J. S. Ballin, hon. secretary of the Apprentices' Institution, in a recent letter on the subject, says:—"The falling off in apprenticeship in London is mainly due to the absence of proper organisation; and I can produce evidence that there is in London no dearth of boys willing to become apprentices, and also no dearth of masters in good trades willing to take apprentices. The difficulties which here exist, especially for the working class, are almost insuperable; and to overcome these, organisation and financial assistance, where premiums are required, are essential. Indeed, it cannot be hoped that this proved and valuable system of teaching boys and girls skilled trades can thrive in London without those two essentials."

It is to provide these that the Apprentices' Institution was founded, the council of which includes Earl Fortescue Lord Avebury, the Lord Mayor, representatives of educational bodies and of trade unions, and also several other gentlemen who have already acquired wide and practical experience of the work which would come into the scope of the operations of the institution. The *modus operandi* intended to be adopted has already been tested, and the results achieved furnish good proof of their practicability and usefulness. The cost of administration will be very moderate, and the principal expenditure will be for the payment of premiums; and it is calculated that a sum of £5 to £6 per annum per apprentice will cover premium, cost of tools where necessary, and supervision over the whole term of apprenticeship. Thus the system may be advocated as being not only a very effectual one, but at the same time economical, and is worthy of that financial support which those interested in raising of the standard of excellence in our handicrafts are asked to give.

There has been a sort of idea abroad, we know, that technical institutes and classes would prove a satisfactory substitute for apprenticeship, and that our youths might earn money during the day and learn their trade at night. Mr. J. D. Crace well exposes this fallacy when he says:—"Technical schools are admirable supplements to training by apprenticeship, but they can never be substitutes. However good the school, work done in a school is done under conditions so different from those of actual employment that the youth well trained in a school remains, in many respects, a 'raw hand.' I write as one who has been for 45 years in constant contact with workmen, and for several years on the committee of a technical school. In the technical school every tool is at hand, suitable material has been carefully chosen, and the unexpected never happens; but much valuable practical and theoretic knowledge of a trade may be learned. On the other hand, none of those unforeseen difficulties occur which are inseparable from actual work, and the readiness to meet which distinguishes the well-trained workmen. Exigencies of construction, or the handy repair of damage, possibly with tools not the best for the purpose, but at hand—all the many failures and casualties which are so vexatious but so instructive in real work—are outside the experience of the technical school, where, again, there is but the one instructor, instead of the varied methods and experience of a dozen or twenty men on a job or in a workshop."

The great need is that youths intended to follow one of the skilled trades or handicrafts should learn their trade in a far more thorough and practical fashion than they do at present. It is, perhaps, almost a necessity of the case that masters would seek a premium with their apprentices, but we think that a youth who has any work in him at all should receive wages from the commencement, and that they should bear some reasonable relation to the amount of service rendered. When apprentices spoil work it is not infrequently for lack of proper direction. Of course, no master should be compelled to keep an idle or unprofitable apprentice. But we feel sure that the wage-earning apprentice would prove a more satisfactory learner and worker than the one who finds himself in the ranks of the great unpaid.

A great deal depends upon the master. It is for him to discover the fitness of a youth—to prove him and see whether he is likely to do well. If he shapes all right and is accepted, then it is the master's duty to see that he is not only taught how to do his work, but to insist that it is done. Idle and unprofitable apprentices are as often as not the product of slack and incompetent management in the workshop, or in the office. As things go now the great hindrance to the attainment of the proper knowledge of a trade is the want of a proper apprenticeship system adapted to meet the conditions and exigencies of modern methods in our workshops and offices. Perhaps the Apprentices' Institute may help to solve this difficult problem in some measure. How best the architectural apprenticeship is to be modernised on a useful basis we do not think has yet been really determined. But here again we believe the system is capable of a good deal of reform, not only as regards the pupil, but also in respect to the master. In all cases, however, so much depends upon the apprentices, and much more upon the masters; in this way they apprehend and fulfil their mutual obligations, the one to the other.

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A MODERN VIEW OF LONDON CHURCH ARCHITECTURE.

By T. F. BUMPUS.

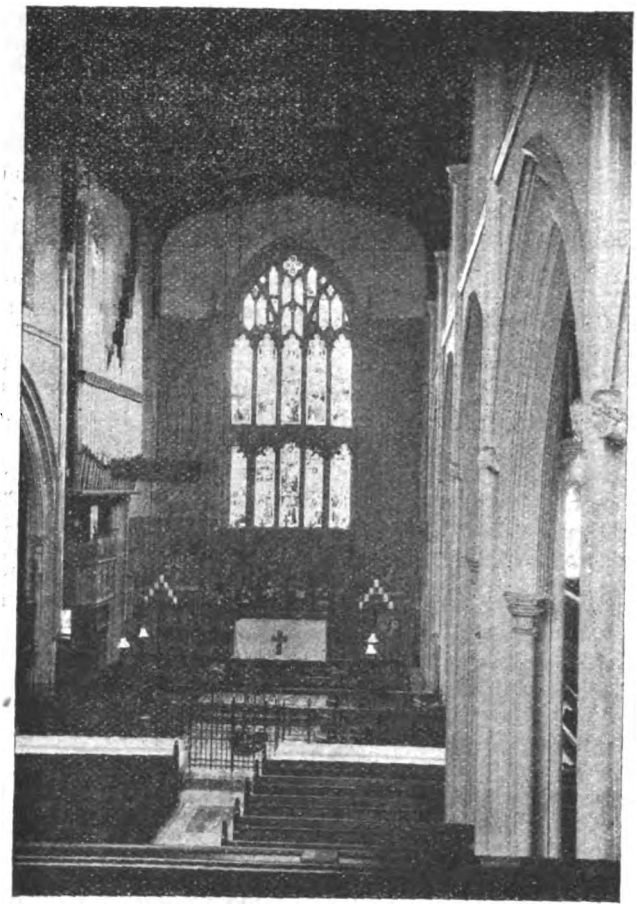
(*Continued from page* 73.)

LONDON possesses five historically interesting churches erected during this phase of the Revival, each of which, illustrating as it does a distinct period of English architecture, was built with the object of celebrating the offices of the Church of England, with ritual completeness and choral accompaniment; while four of their number form striking monuments of individual generosity.

The names and dates of these churches, in the order to which we shall refer to them in this paper, are as follows:—St. Andrew's, Wells Street (1847); St. Mary Magdalene, Munster Square (1852); St. Barnabas, Pimlico (1850); St. Stephen, Rochester Row, Westminster (1850); and Holy Trinity, Bessborough Gardens (1852).

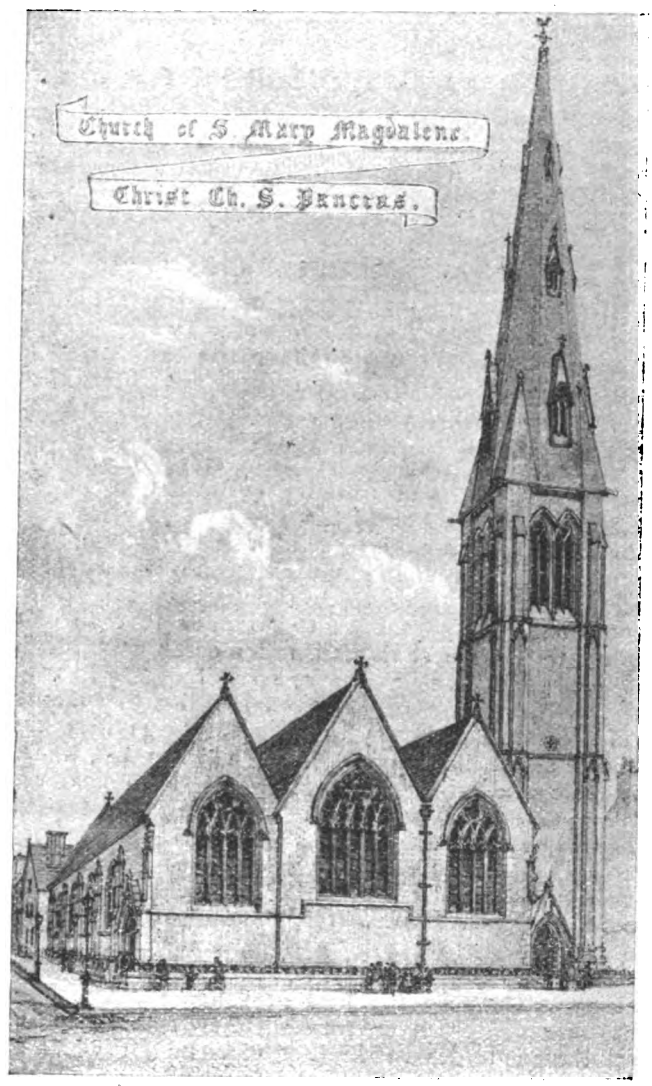
St. Andrew's, Wells Street, from the designs of Dawkes, presents us with an instance of what an architect can do when confronted with an awkward site. In this case the designer had at his disposal a square plot of ground lying between houses. Bearing in mind the lofty Perpendicular churches of Bristol, Norwich and York, he reared upon this site a church having a broad clerestoried nave and chancel under one continuous roof, very wide aisles, and a steeple forming a porch at the north-west angle.

Without pretending to be a complete or important specimen of revived Perpendicular, St. Andrew's, Wells Street, is interesting in the evidence which it affords of the gradual progress of ecclesiastical art during the past half century. The first church built under Sir Robert Peel's Act, it was long considered a model as regards its ritual arrangements, but it was not until it became, in 1862, the scene of the ministrations of the Rev. Benjamin Webb—one of the founders of the Cambridge Camden Society—that it began to be enriched from time to time by *instrumenta* from the hands of almost every architect of eminence. The chief amelioration, the redistribution of the choral fittings, was undertaken about 1867, under the



ST. ANDREW'S, WELLS STREET.

late Mr. G. E. Street, to whom we owe the graceful chancel screen and gates, and the elaborate reredos from the chisel of Redfern. The east window had been filled with stained glass in 1850, by Hardman, from the designs and under the superintendence of Pugin. Burges designed the mural monument to Mr. Webb's predecessor in the in-



ST. MARY MAGDALENE, MUNSTER SQUARE.
(From Richard Carpenter's Original Sketch, 1849.)

cumbency, the Rev. James Murray, Lavers and Barraud contributing the painted glass to the window which sheds its silvery light upon it.

Bodley decorated the sacristies; Seddon furnished the designs for many of the altar frontals; to Pearson are due the sedilia (in memory of the Rev. Benjamin Webb, who died in 1885) the font and its canopy; while from the *ateliers* of Clayton and Bell issued the stained glass in the three western windows,* that filling the square-headed window in the north aisle, and all in the northern clerestory. The delicate paintings on the fronts of the galleries, whose retention the crowded state of the church at its principal services renders imperative, are due to the same artists, the iconography having been drawn up by the late Mr. Alfred Bell, with uncommon thought and skill.

The founder of St. Andrews, Wells Street, was Dean Chandler, of Chichester, rector of All Souls', Langham Place. Dean Chandler, who died in 1858, is one to whom all those taking an interest in the great ecclesiological movement owe a peculiar debt of gratitude. When circumstances compelled the Cambridge Camden Society to quit the town of its birth and to seek London under a new name, the good Dean was a nursing father to that struggling body. Besides founding the church to which we have just drawn attention, he made possible that other and neighbouring one—also carved out of his parish and which grew out of the early Camdenians' dream of the "model church"—All Saints, Margaret Street. As Dean of Chichester, Dr. Chandler entrusted the restoration of that most beautiful of our lesser minsters to Richard Carpenter,

*The stained glass in the west window of the north aisle—commemorative of a lady who was a great musician—was the very last piece of vitreous decoration criticised by the "Ecclesiologist," a review of it appearing in the December (and last) number of that periodical for 1868.

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one of the earliest, fastest, and most distinguished friends of the Ecclesiological Society. To him we owe one of the most graceful churches built in London, after the old models, to which we can point—St. Mary Magdalene, Munster Square, begun in 1849, and finished, as regards its nave, chancel, and south aisle, in 1852. It remained incomplete until 1884, but the internal appearance of St. Mary Magdalene's, Munster Square, was even then one of the deepest religiosity, derivable from the noble sentiment which must have pervaded the mind of its designer, and from the painted glass with which all its windows were filled. Fourteen years ago the north aisle was added as a memorial to the church's founder and incumbent, the Rev. E. A. Stuart, who died in 1877, having spent the best twenty-five years of his life in its service without reward and without prospect of any earthly advantage; but the tower and spire which Carpenter designed to stand at the south-west corner have yet to be reared.

The interior of St. Mary Magdalene, Munster Square, is, with its light, graceful arcades, its spacious aisles, almost as wide and rising to the same height as the nave, its deep chancel, and its unencumbered area, quite an ideal town church, the architect's *motif* being, in all probability, that noble fragment, the nave of the Austin Friars Church, near Broad Street. The style, Geometrical, melts, in the chancel, into the Flowing Decorated—a mingling of the two phases of the Middle Pointed style illustrated in the noble seven-light eastern window, which is filled with stained glass by Hardman, from the designs of Pugin, who considered it one of the most successful modern windows in England. The western window of the nave of St. Mary Magdalene, Munster Square, is interesting as forming a memorial to the gifted architect of the church, Richard Carpenter. He died in 1855, three years after Pugin, and like that great pioneer of the Gothic Revival, left no really great work behind him, albeit those of which we are in possession are stamped with a charm and grace that is peculiarly English.

The cartoons for the Carpenter memorial window were prepared by his pupil, Mr. J. R. Clayton (Hardman being

ST. MARY MAGDALENE, MUNSTER SQUARE.
Interior looking East.

entrusted with the mechanical portion), and the window, whose effigies will, on inspection, be found to refer more or less to building, fixed towards the close of 1857.

Two of Messrs. Clayton and Bell's earliest works (1859-60) may be seen in this church, viz., the windows representing the Resurrection and the Pentecost in the southern nave. The former was executed under the superintendence of Mr. Butterfield, to whom the opaqueness of its tinctures are due, and the pair form a memorial to Baron Alderson, who laid the foundation stone of St. Mary Magdalene's in July, 1849, and who, until his death, ten years later, was one of its most zealous supporters. Later and more refined productions of Clayton and Bell are the western window of the north and south naves, the eastern one of the former, with effigies o the patron between the Evangelists; and that to the immediate left of it. Lavers and Barraud have an early window—that representing the Nativity—in the south nave, but it requires white to relieve the preponderance of blue and purple, though the drawing is graceful and refined. Heaton and Butler are represented in three windows of the north nave. The two remaining windows to be noticed—a reticulated one on the south side of the sanctuary, and the large five-light one closing the south nave—are by Hardman, very Puginic in treatment, but sadly in need of restoration, portions having been quite obliterated, most probably from insufficient burning. The graceful quadrupled shafts of the nave arcades; the font, a copy of a rare ancient example; the skilful manner in which the organ-case is bracketed against the wall of the south aisle; the light iron grilles to the chancel arches; the frescoes enriching the arcades of the sanctuary walls the dignified arrangement of the high altar and its surroundings, and the seating of the nave and aisles with chairs, are amongst the most noteworthy points of interest in this church, whose grand spaciousness eminently fits it for the imposing ceremonial of its services.*

(*To be continued.*)

NOTES ON CURRENT EVENTS.

WE hear from the best possible source that there is some definite likelihood of the designs by Mr. Henry T. Hare for the proposed new Strand frontages being accepted by the London County Council. No actual official decision has been arrived at, but, apart from this, the matter is regarded as practically settled. Mr. Hare's scheme is a very excellent one, and should be effective in result, provided the County Council can ensure its being properly carried out under the supervision of its author. What is to be done with the central portion of the island site yet remains to be seen. No doubt modifications will be made in Mr. Hare's designs, but presumably all such modifications and alterations will be made under his direction and control. The question yet remains as to how the Council are going to compel the carrying out of the design as they wish it. Let us hope it may be possible for them to do it.

THE Swansea Harbour Offices competition has been determined, Mr. W. M. Fawcett, the assessor, making his award as follows:—First premium, £100, to Mr. E. Seward, Cardiff; and the second premium of £50 to Messrs. Fairhurst & Thornley, of Blackburn.

THE Bristol Workhouse Infirmary competition has resulted as follows:—First premium, £200, Mr. H. Percy Adams, F.R.I.B.A., London; second premium, £150, Messrs. Giles, Gough & Trollope, London; and third premium, £100, Mr. Arthur Marshall, Nottingham.

WESTERN AUSTRALIA proposes to spend £100,000 upon a new House of Parliament "worthy of the growing importance of the Colony." The building would, of course, be erected at Perth, which has rapidly increased in size since the opening of the goldfields. Only Australian architects are invited to submit competitive designs. We are told that in addition to the £100,000 for the building "£500 is to be spent on the design, this being offered to the architect whose plans meet the sanction of the authorities at Perth." One does not know if the design is to be bought outright for £500, but, of course, under the ordinary scale of pro-

*St. Mary Magdalene's was one of the earliest London churches in which the Eucharistic vestments and incense were adopted, being speedily followed by St. Matthias, Stoke Newington, St. Alban's, Holborn, and Christ Church, Clapham.

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fessional charges the commission for designs and superintendence of erection would amount to at least £5,000, or, without superintendence of building operation, £2,500.

A GOOD opportunity for lovers of first-rate English water-colour art will be offered by the dispersion of the remainder of the late Mr. E. M. Wimperis's pictures at Messrs. Christie, Manson & Woods on Saturday, February 9th, and Monday, February 11th, and the two following days. The sale includes several pictures by other well-known artists which belonged to Mr. Wimperis.

NOT often do we hear of builders raising a memorial to an architect, but it is a fact that the master builders of Chester purpose placing a memorial in the church of St. John to the late Mr. T. M. Lockwood, the well-known architect of Chester. It will take the form of a stained-glass window, having for its subject, Hiram, the architect, artificer and builder of the Temple.

No doubt the number of suggestions for suitable memorials of the late Queen Victoria will be legion. But we certainly think some means should be taken of identifying her with the new Strand to the Holborn thoroughfare. Whether it could be named Queen's Avenue or Victoria Avenue is perhaps a debatable point, since we have already Queen Street and Victoria Street, to say nothing of Queen Victoria Street. Still some identification of the Queen with the new thoroughfare seems to be called for, since it was one of the most important schemes of London street improvement undertaken in her reign.

MR. F. HOWARTH, architect and surveyor, Sedgley, near Dudley, has opened an office at Town Hall Chambers, Bilston, Staffs., his office at Sedgley being still kept open.

THE Manchester City Council propose appointing a city architect in order to relieve the pressure of work at present put upon the surveyor's department. Mr. T. H. Oldham, F.R.I.B.A., President of the Manchester Society of Architects, suggests that, "in the event of such an appointment being decided upon it should be given to an architect who is a member of the Royal Institute, and upon whom all applicants, in addition to the Council, may rely both for information and courtesy.

BEFORE the members of the Leeds and Yorkshire Architectural Society, at Leeds, on Monday evening last, Mr. T. S. Elgood delivered a lecture on the subject of "Ornamental Ironwork." After speaking of the beautiful cathedral screens of Spain, the artistically wrought caskets and escutcheons of France, and the art works in iron of Italy and France, the lecturer said he regretted that of late in this country comparatively little attention had been devoted to this important method of ornamentation. What was known as Queen Anne work was, he contended, both economical and effective, and he urged that decorative work of this character might, with advantage, be more extensively employed. His remarks were illustrated by a number of excellent lantern slides.

MR. B. T. BATSFORD announces a second issue of Mr. Edwin O. Sachs' monumental work, "Modern Opera Houses and Theatres," which will be published in the spring. Mr. Sachs' work comprises three folio volumes with two hundred and twenty plates, and over one thousand illustrations, the first edition appearing in 1896 to 1898 after having required over eight years' preparation. The new issue will be in no wise inferior to the original, and will contain a special prefatory note dealing with the latest developments and improvements in theatre design and construction which Mr. Sachs has to such a great extent been instrumental in bringing about, not only at home, but in foreign countries.

THE first exhibition of pictures in the new Whitechapel Art Gallery, which is to be opened on March 12th, promises to be a most interesting one. A large number of valuable and interesting works have been promised for the loan collection to be exhibited there. The following seven pictures exhibited in the British Pavilion at the Paris Exhibition are to be loaned by Mr. J. Pierpont Morgan:—"Bellini's pictures carried in State to the Redemptore," by Turner; Constable's "White Horse;" "The Lady's Last Stake," by Hogarth; and portraits by Reynolds, Romney, Lawrence, and Raeburn. Gainsborough's "Shepherd Boy," also from Paris, is to be lent by Mr. Darell Brown, who contributes in addition landscapes by Crome and Stark and a sea-piece by Cotman. Works by Ford Madox Brown are to be lent by Mr. Henry Boddington, of Pownall Hall, Manchester, his loan including "Don Juan and Haidée;" "Cromwell, Milton, and Marvel;" and "The Traveller;" while Mr. Lever sends "Cromwell on his Farm." Mr. W. M. Rossetti sends the portrait of Professor and Mrs. Fawcett and some early sketches. Sir Edward Poynter, P.R.A., sends his "Horæ Serenæ," and Sir L. Alma Tadema has obtained the loan of his work, "A Question." Sir Samuel Montagu will lend Morland's "The Postboy's Return," and Millais will be represented by "The Carpenter's Shop." Valuable portraits by Vandyk and Lely and a group of Canaletto's views of London have also been offered; but it is uncertain whether the authorities of the gallery can afford the necessary insurance, unless they are enabled to do so by further offers of financial assistance.

THE fifth annual meeting of the Clergy and Artists' Association was held on the 31st ult., under the presidency of Canon Lonsdale Rugg. The report, which was read by Mr. Reginald Hallward, hon. secretary, recorded the withdrawal of some of the members during the year, and, while this was regretted, the association was now all the stronger by the fact that the members were undivided in their aim, and took a deeper interest in the work to be accomplished. The exhibition held in connection with the Church Congress at Newcastle compared favourably with those previously held. These art exhibitions would now be a permanent feature in future congresses. Twenty-six new members had joined during the year. The income of the association for the year was £104 12s., and its expenditure £106 14s., and there remained a deficit of £33 16s. In moving the adoption of the report the chairman said the association did not seek for popularity, but rather to exert a very real influence in the matter of art in our churches. The report having been adopted and the officers re-elected, Mr. W. Bainbridge Reynolds read a paper on "Metal Work in Church Art." A discussion followed.

THE annual exhibition of the Glasgow Institute of Art was opened to the public yesterday in the Galleries, Sauchiehall Street. The Institute begins the century under new guidance. Last year it had the grief to lose, by death, both its chairman of council and its acting secretary. Mr. Patrick S. Dunn, a former member of council, has been elected to fill the office of chairman, while to the acting secretaryship has been appointed Mr. Percy Bate, a gentleman from Bath. The present exhibition, remarks the *Scotsman*, has been promoted upon old lines, though some changes are noticeable in the appearance of the rooms, and in the class of pictures upon the walls. A brighter and more cheerful aspect has been given to the Galleries as a whole by the removal of certain screens between the larger rooms and the connecting corridors, and instead of having a free admixture of loan "old masters," the new chairman and secretary have been successful in inducing a number of eminent London artists to send pictures, which, though they have been exhibited before at the Royal Academy and New Gallery, will be attractive, as examples of contemporary English art, to the great bulk of the visitors to the Institute. On the whole, therefore, the exhibition to which these works give backbone has great variety and interest; for, as usual, there are not a few pictures by the Glasgow artists themselves which are worthy of attention. The number of works exhibited is 817, which includes 548 oil pictures, 30 more than last year; 126 water colours, 42 fewer; 19 works in black and white, 67 architectural drawings, 44 pieces of sculpture, and 13 examples of what the French call objets d'art.

THE annual meeting for 1901 of the Royal Cambrian Academy of Art was held on Tuesday at Plas Mawr, Conway, under the presidency of Mr. H. Clarence Whaite, R.W.S., the vice-chairman being Mr. C. C. Grundy. The president's report showed the Society to be in a vigorous and thriving condition. The report was unanimously adopted. Mr. John Finnie, R.E., treasurer, presented a satisfactory statement of accounts, which was also adopted

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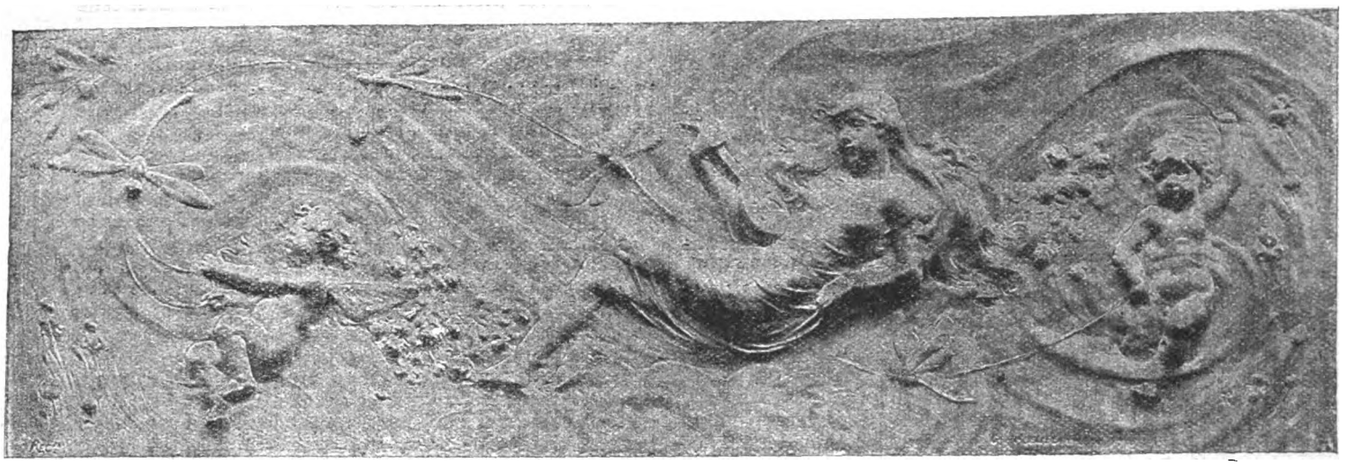

A NEW METALLIC DECORATION.

unanimously. The president, vice-president, treasurer, and the hon. secretary (Mr. J. W. Slater) were re-elected. The following were elected on the council:—Messrs. A. W. Ayling, George Cockram, C. Cole, J. Pain Davies, B. Fisher, Anderson Hague, G. Harrison, Harold Hughes, F.R.I.B.A., J. Clinton Jones, Joseph Knight, Paul Knight, F. W. Longshaw, A. F. Perrin, J. C. Salmon, and F. T. Sibley. Messrs. H. Hughes and C. Cole are the new members of the council. After the examination of the candidates' work, etc., the following were elected associates:—Messrs. Lionel Edwards, Penarth, Conway; Shirley Slocumbe, 3, Scarsdale Studios, Kensington; and Richard Gay, Somerset, Bettws-y-coed. The following were appointed the hanging committee:—Messrs. Ayling, Cole, Fisher, and Hague. The receiving days for this year's exhibition are May 3 and 4; varnishing day, May 21; press day, May 22; private view day, May 25; exhibition to open on May 27 and to close September 28. A hearty vote of thanks to the president for his services in the past year terminated the proceedings.

MR. HARRY HEMS writes us:—"Thomas Wilkinson Wallis, of Louth, Lincolnshire, undoubtedly the Grinling Gibbons of the 19th century, celebrated the 80th anniversary of his birth last Monday. Our readers will be glad to learn the grand old man is at present in the enjoyment of excellent health, and, although he has long since given up the production of those exquisite wood-carvings of still life that caused all the world to wonder at the Great Exhibition of 1851, he still occupies much of his leisure time in painting in oils. Our readers will probably remember that the veteran sculptor in wood in 1899 brought out an autobiography, being extracts from a journal kept for 60 successive years. Few more interesting records of the ups and downs of a struggling and most gifted artist have, perhaps, ever been written, and no modern wood-carver should be without a copy of the volume in question. Mr. Wallis was born in Hull, of poor but respectable parents, on February 4th, 1821, and, although at birth was a weakly child, never expected to survive more than a few months, has been spared to become a hale old patriarch. Continuous application to the delicate manipulation of his wonderful art caused him at last to go almost quite blind, and he had to give up carving for less trying pursuits. In 1895 he received the long service silver medal after being Quartermaster-sergeant of the Louth Volunteers for 20 years. We trust health and strength may yet be preserved to the aged craftsman, who, it was universally admitted at the 1851 Greater Exhibition, beat the whole world in the beauty of his handiwork."

LAXTON'S Builders' Price Book for 1901 (London: Kelly's Directories, Limited) has reached us. This standard work has been carefully revised so as to bring the prices (based upon the lowest quotations of the cost of materials) and the further information given in the work fully up to date, thus making it as accurate and complete as possible. Important decisions under the last London Building Act (1894) in the Superior Courts and before the Tribunal of Appeal are fully given, as also reports of "Heads of Cases" brought before the Metropolitan magistrates under the same Act. There is given the usual large amount of information of special value to architects and builders The Bye-Laws made by the London County Council, under the Metropolis Management and Building Acts Amendment Act, 1878, the London Council (General Powers) Act, 1890, the Public Health (London) Act, 1891, remain still in force, as do also the Regulations under the Metropolis Amendment Act, 1878, and the latest ones under the London Building Act, 1894. All these are stated *in extenso*. The Bye-Laws of the London County Council and the Regulations by the Council applying to Theatres and other places of public amusement, including the recent important Bye-Laws by the London County Council under the Public Health Act, 1891, are also given. A useful Index of Acts of Parliament, Bye-Laws of the London County Council and Local Boards of London and the City of London, etc, is given.

THE proposed new and amended regulations of the London Water Companies were generally condemned at the meeting of the London County Council, and in the end the voting against them was ninety-nine, and in their favour only four.

THE Council at the same meeting passed a resolution in favour of subways under the leading thoroughfares, to contain all the gas and water pipes and telegraph and telephone wires.

WE give two illustrations of a new process of producing metallic decoration, patented by Messrs. B. Dellagana & Co., Limited, Shoe Lane, E.C. The method, which consists of an electro-deposition of copper, is well adapted for the production of enriched mouldings, carvings, repousse, and other art metal work, etc. The result shows a very pleasing effect, whether in high or low relief, and the colouring of the finished copper work is very excellent in some of the examples we inspected. The method, besides giving good results, is expeditious and much cheaper, we understand, than the usual casting. In some of the cornice work the plaster model was simply covered with a copper skin, as it were, and thus preserving in a remarkable degree the lightness of the original plaster. In the same way other heavier ornamental examples are treated with similarly good results. Of course, the method can be applied to a very large field of decorative art. Architects should inspect for themselves the examples which Messrs Dellagana have on view. They would then better understand both the process and the results.

A NEW METALLIC DECORATION.

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OUR ILLUSTRATIONS.

GLASGOW ROYAL INFIRMARY COMPETITION.

DESIGN BY T. L. WATSON AND MITCHELL, GLASGOW.

WE illustrate to-day the Jubilee Memorial block of the scheme for the reconstruction of Glasgow Royal Infirmary submitted in the recent competition by Messrs. T. L. Watson & Mitchell, of Glasgow. The design was placed third in order of merit by the assessor, Dr. Rowland Anderson.

Our readers will gather how ably this building fulfils the scheme of providing a front block to serve as a Jubilee Memorial, which shall be possessed of considerable dignity and reminiscent of the present design, and at the same time without damaging the effect of the fine old cathedral standing adjacent. The building was necessarily lofty, but by the skilful adaptation of the design does not look overpoweringly so.

Our illustration to-day is a true suggestion of what this design would be like with its surroundings for the cathedral as well as the hospital are both carefully drawn to actual scale.

We quote the following by way of description from the author's description of the plans:—

"The accommodation is provided in a series of separate and detached buildings, each of which is reached by an open carriage-way through the western quadrangle, while the service of the buildings is conducted also by means of a subway or covered corridor." This disposition admits of a free circulation of air round all the blocks, and as far as possible a perfectly open space in front of all windows. The primary requirements of fresh air and sunlight are secured by this means, and the several classes of patients are more completely separated from one another than would be practicable otherwise, while the service of the infirmary is direct and convenient.

The arrangement and accommodation of the main buildings are as follows:—North block (medical), 220 beds; central block (surgical), 312 beds; south block (special diseases), 78 beds; east block (isolation, etc.), 56 beds; gate-house (emergency), 10 beds. In addition to these the plan includes:—Administration, store and kitchen, dining-rooms for nurses, resident doctors, and servants. The plan includes also:—Dispensary, workshops, baths, Pathological Institution, home, washing-house and laundry.

DESIGN FOR ENTRANCE GATES TO PUBLIC PARK.

HAROLD C. TRIMNELL, A.R.I.B.A., ARCHITECT.

WE illustrate to-day a pleasing design of decided refinement and dignity, which, perhaps, ought to have figured in the recent competition for the Tite Prize.

THE ART OF DESIGNING SMALL HOUSES AND COTTAGES.*

BY BARRY PARKER AND RAYMOND UNWIN.

THE relationship of an expert to his client must always be rather a complex one. He is called upon to render a service to his employer, but it is he who must determine the way in which it shall be rendered. He is free to obey his employer's directions only so long as these accord with his own principles, or at any rate do not clash with them in anything that he holds vital; but in a large measure he must direct his employer, not be directed by him: his own reputation is at stake in every transaction. Not only is the relation a complex one, but if it is to be successful it should frequently be an intimate one. The doctor called in to set a broken bone, or the lawyer to transfer a property, need know little of their employer. But were the one required to treat a complicated malady or the other to draw up a will, a personal knowledge of the employer and his affairs would be of the utmost value. In like manner the architect who is to design a shop or a warehouse need know only the business requirements of his client, but the one who is to plan him a house cannot very well know too much about his family life and his personality. If one could always spend a week-end in the old house of a client before designing him a new one, it would be a good thing.

Certainly it is in the domestic branch of our work that our relations are most complex. Each commission is a fresh problem full of human interest, the right solution of which demands that it shall be considered from many aspects. We must look upon the task primarily as the providing of a suitable setting for the life of our client and his family. In this connection not only his actual wants, but his ideals of life have to be taken thought of, as also his financial position. Nor must we overlook our possible influence upon him through his house.

Again, each house appeals to us as a new creation of our art. Here we are in much the same position as the portrait painter. The likeness truly is that of the sitter, but the interpretation of it, the setting, and the colour—in short, the art of the picture—belong to the painter. So, too, the house as a habitation belongs to and must satisfy the client, while as a work of art it belongs to and must satisfy its designer. In this matter we stand as guardians alike of our reputation and of the general interest of the public as beholders of the building. The right of the public to consideration is much clearer than many seem to realise: the building is forced on them, they have no option but to see it. Much of the joy of life comes from the beauty of the place we live in, as much of the gloom comes from its ugliness. No one who might add to the joy by building *something* comely has any right to add to the gloom by building what is ill-looking.

I do not anticipate that these considerations, or those which we shall come to presently, are new to you. But it is probable that each would arrange them in a different order of relative importance, so that in no two of us is our attitude towards the problem exactly alike. In no house can every advantage be obtained; each must be somewhat of a compromise; in each there must be a sacrificing of what we deem the less important to secure what we esteem of greater value. It follows that the variety of our attitude must produce individuality in the results. When, therefore, you did me the honour to suggest that I should bring this subject before you I felt that the best response I could make would be to try and give you, as from one fellow-workman to another, some account of the way in which we approach this particular piece of work, hoping that in comparing this and the results which we shall show with other methods and results, you might find some little interest.

Suppose then that we have received a commission for a dwelling house; that we have made ourselves sufficiently acquainted with our new client's wishes, his mode of life and habits, by getting him to write us very fully of every thing he would like to be specially considered, discussing points with him, or visiting his home, as circumstances may suggest; and further, that we have made full notes of all the instructions and information thus gathered for our own use; the first thing is to visit the site and devote some time to thinking out the problem on the spot. The site is the most important factor to be considered, for it usually suggests both the internal arrangement and the external treatment.

If the site is a large one, the position of the house upon it must first be determined. In past times the house was regarded mainly as a shelter, and this greatly influenced the choice of its position. There is no doubt that to the weakening of the influence of considerations of shelter in the choice of sites we owe much of that lack of fitness to its position which is so common a characteristic of the modern building. But we do not to-day build so much shelters for people who live outside as dwellings for people from whence they may occasionally go out. A primary consideration then must be to so place the house as to afford its occupants the greatest possible enjoyment of such beauty of adjacent country or grandeur of distant view as the site can command. While doing this, however, we must so place and design the house that it shall not stand out as a disturbing excrescence, but shall look at home in its place, in harmony with its surroundings.

This consideration of the house as a detail in a larger picture will bring us to a determination of its general form, its treatment, and its colouring. Some positions demand a

* A paper read before the Society of Architects by Mr. Raymond Unwin on the 7th inst.

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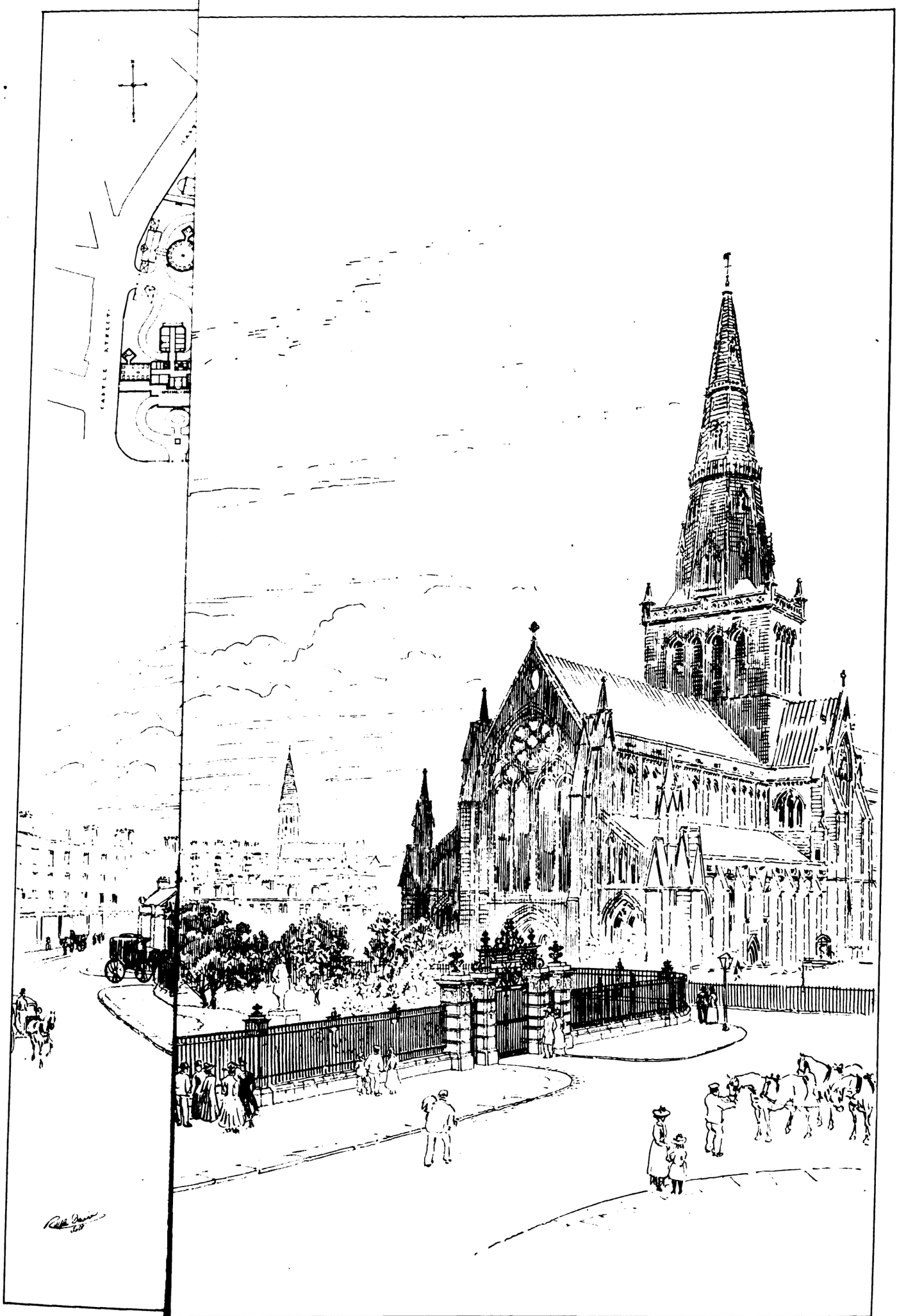

GLASGOW INFIRMARY RECONSTRUCTION
DESIGN BY T L WATSON & MITCHELL GLASGOW.

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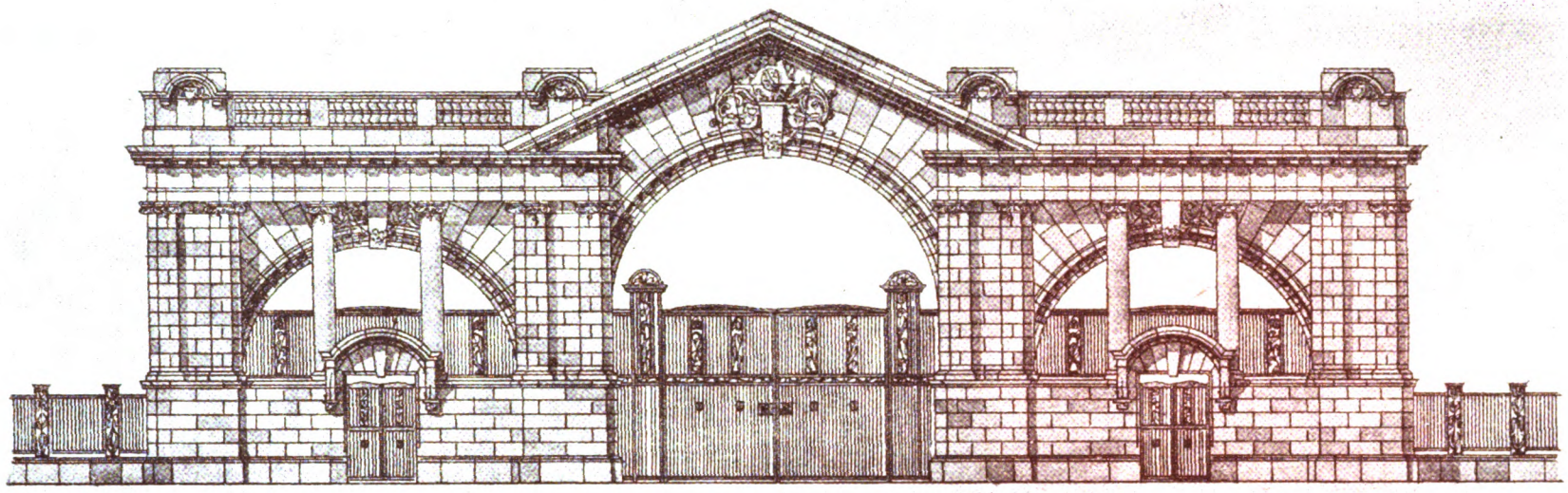
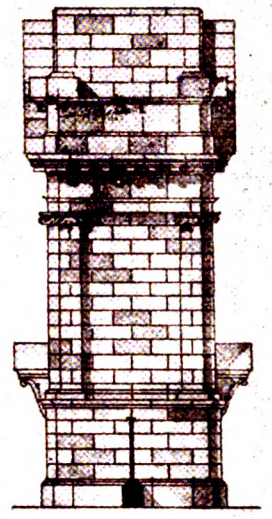
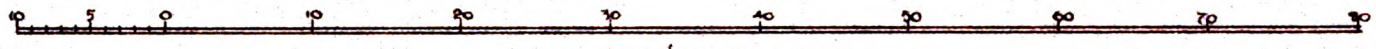
DESIGN FOR ENTRANCE GATES TO A PUBLIC PARK.



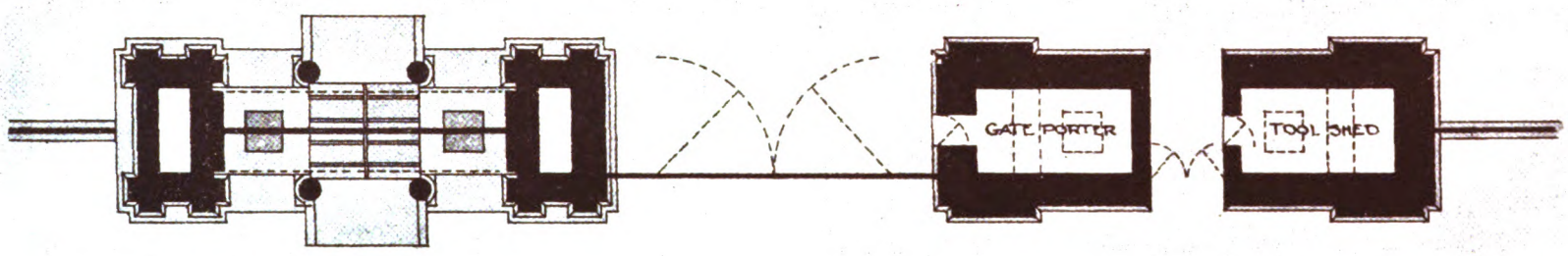
FRONT ELEVATION.



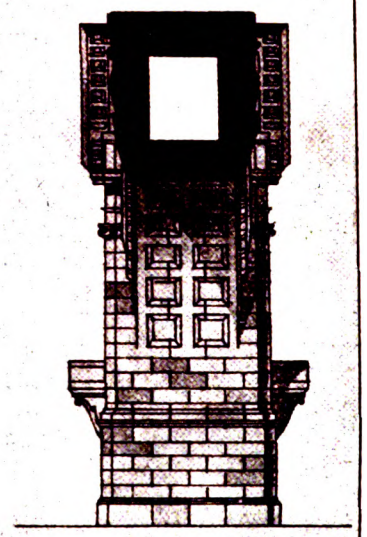
SIDE ELEVATION.



SCALE ½ INCH = 1 FOOT



PLAN.



SECTION.

Harold C. Trimnell, ARIBA
Architect

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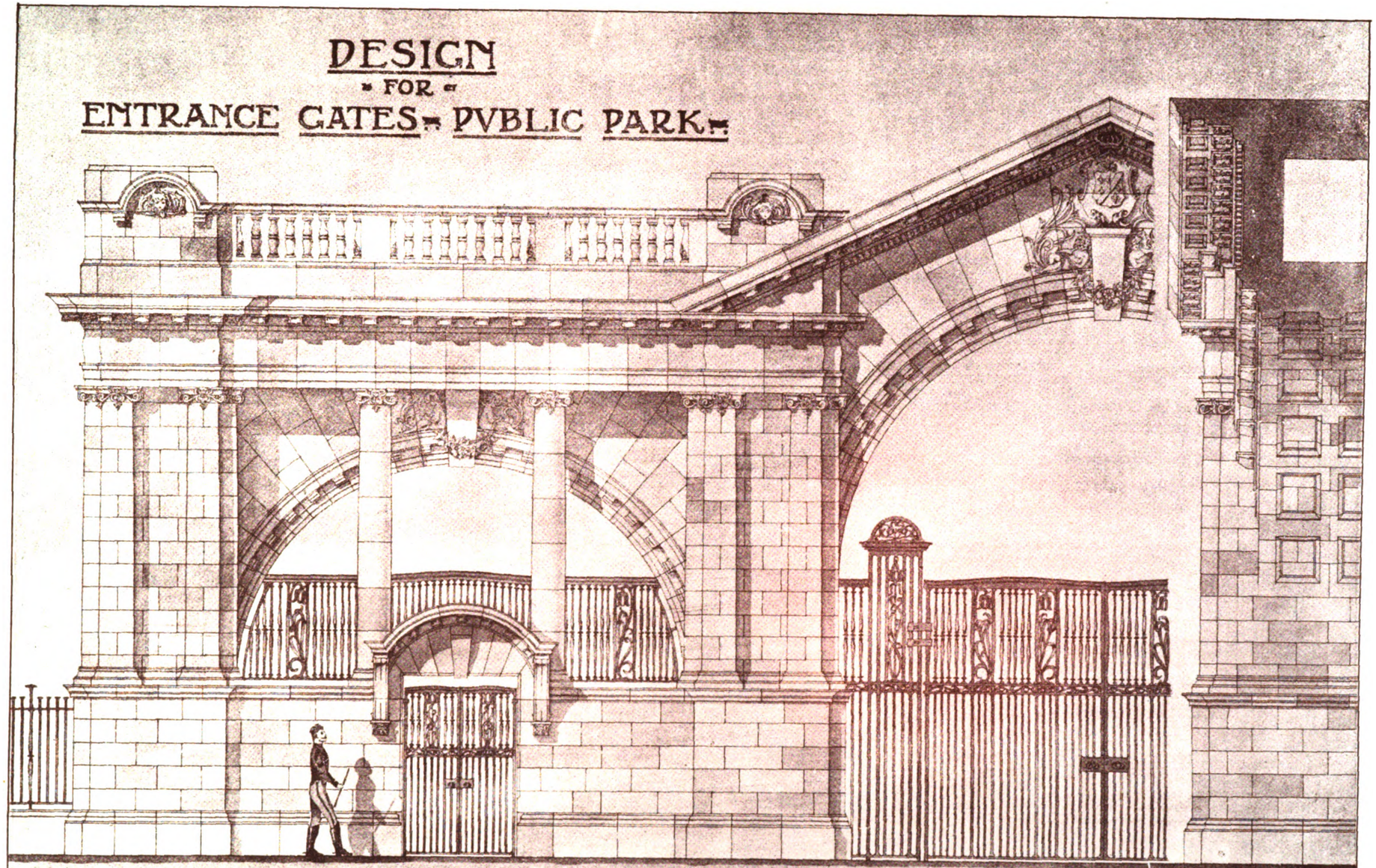
DESIGN
FOR
ENTRANCE GATES TO PUBLIC PARK.



HALF ELEVATION.
SCALE ½ INCH = 1 FOOT.

HALF SECTION.

Harold C. Trimnell A.R.I.B.A.
Architect.

THE BRITISH ARCHITECT, FEBRUARY 8TH 1901. COPYRIGHT.

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lofty building to crown or complete a spur of rising ground, for example, while others seem to suggest that it be kept as low as possible, as when it nestles under some protecting hill-side. And in the country, at any rate, the low house is usually more successful, more in harmony with the scenery, perhaps because it is suggestive more of man's dependence upon nature, less of his defiance of her powers. Some natural terrace may suggest a long house with all its rooms facing one way, or a ridge may indicate a double-faced house commanding the outlook down over each slope, or perhaps a steep hill-side will ask for a house following its lines and clinging to it story by story, while a gentle slope will demand a general grouping of the roofs to give a sense of stability by contradicting it.

In the choice of materials and colouring, harmony rather than strong contrast should be sought. There is only one sure way of obtaining this at all generally, which is, of course, to keep to local materials and local ways of using them. At any rate, I think we may lay it down that strong reasons of use or economy are needed to justify a departure from these. When a departure is made let the contrast with what is usual in the district be as slight as may be. We do not enough consider when we introduce for the first time into some valley a bright red roof, how it will haunt the eye from every point of view, and may go far towards marring the beauty of the whole scene by destroying its restfulness. At any rate, we should let the surroundings which are to constitute the picture suggest the colouring of the new object we are about to introduce just as much as its form. In some places a low-toned colour scheme, as stone walls and grey stone or slate roof, seems most fitting, in others the warmth and brightness of bricks and tiles; some invite the homeliness of white-wash, while others suggest the deep colouring of green or purple slate. Whatever it is, some definite colour scheme should be adopted and colours of paint and any enrichments made to contribute to it.

Greatly as must the site influence the external treatment of the house, its internal arrangement will be even more definitely dictated by it. The position of each room in relation to the points of the compass and the outlook should be determined on the spot. It is now pretty generally realised that no sacrifice is too great which is necessary to enable us to bring plenty of sunshine into all the main living rooms. In the South of England perhaps home moderation must be observed in applying this rule, there being no inconsiderable number of days on which a too sunny room may become unbearably hot, and, where the size of the house will allow of it, to have an east and west room is often a great boon. But over the greater part of our country, certainly in the Midlands and the North, the importance of arranging for the few days when the sun is oppressive is small indeed compared with that of planning to suit the many days when every hour of sunshine is of the utmost value. The general rule then would seem to be, to so contrive as to get the sunshine into a room at the time when it is likely to be most occupied. Let a study or breakfast room be east or south-east, a general living-room or drawing-room south and south-west. A good western window in the room we most occupy in the latter part of the day, gives us many an extra hour of daylight; while the opportunity it affords us of habitually seeing the bright colour of sunset is a privilege which is worth some effort to obtain. A kitchen is best north-east or east, for the first coming down into the fireless house may well have its cheerlessness reduced for the servants by what sunshine is to be had at an early hour; later in the day, when the kitchen is hot with cooking, the heat of the sun should not be added. A bathroom and bedrooms too are pleasant with an eastern aspect, though some cannot sleep in a room into which early sunshine can come.

Next only in importance to such considerations of aspect, and certainly important enough to modify them somewhat, is the question of prospect. For a pleasant outlook is a boon only less great than a sunny aspect. We must not ignore a fine view even when it can only be had to the north, and much less must we allow any trivial conventions, like the old commonly accepted idea that the front of the house should be to the road, to betray us into sacrificing such solid advantages as sunshine and a pleasant view. In fact, to produce a good plan, one should go to the site without any preconceived conventions, but with a quite open mind, prepared to think out each fresh problem on the spot from the beginning, and to receive all the suggestions the site can offer. I hope you will pardon me if I seem to insist unduly on the importance of so elementary a principle as that of building to suit each site. But one sees the principle so commonly disregarded that it is needful to emphasise it. Not only do we find houses perched uncomfortably on the shoulder of a hill, or thrust into prominence one way or another regardless of their effect on their surroundings, but, in arrangement the disregard of the site is carried so far that semi-detached houses are even built with their plans just reversed, so that a plan designed for the north end is made to serve for the south, or one arranged to suit for the east side allowed to pass for the west.

Before leaving the site one should be able to carry away not only detailed notes of drainage, water supply, levels, fine trees, views, and aspects, but also a general idea as to the best arrangement of the rooms of the new house, an ideal plan to be aimed at, and a sort of mental sketch in block of the general form the new creation should take externally.

It would be only tedious to you if I were to go through all the details of a house, trying to deal with them in a general way. I will therefore now take one or two definite examples and explain how and why we worked with them as we did, trusting that the interest which attaches to any actual problem solved may come to my aid and redeem the details from tediousness.

[The authors here described a country house designed for a site requiring special treatment, but we pass on from this to their description of a house of the really smaller type.—ED. *B.A.*]

In this plan a special effort was made to obtain one room giving some sense of space in a house not large enough to contain several large rooms. In all small houses much must be sacrificed, but it seems to us to be infinitely less of a sacrifice to reduce the number of rooms than it is to reduce the size of them all until they are mere boxes. In every small house it should, we think, be a first consideration to secure one room large enough to afford some opportunity for interest being worked into the room itself, and to allow of some comfort and dignity in the life of its occupants.

In the plan now before us the hall was made into the chief living-room; it is carried up two stories to allow of an organ gallery. The gallery leading to the balcony, the landing, and the staircase, are all thrown into this hall, the stairs being so arranged as to afford a screen to the fire, forming a sort of deep ingle with low ceiling under the landing. The low ceiling continues under the organ gallery and the balcony, the central part of the hall being open to the full height. The sense of cosiness in this ingle is greatly enhanced by contrast with the lofty open space outside; while the variety in lighting, whether when the morning sun streams in at the great east window, or when the ingle glows red in the gathering dusk, adds a perpetual charm. In the gallery is a second fire with a lounge seat by the organ under a kind of canopy formed by the half landing of the second floor stairs.

To obtain this spacious hall the remainder of the house has been reduced as much as possible. Only one other small room, for den or meal room, is provided, with kitchens, offices, and four bedrooms, two of which are on the second floor. It is open to question whether it would not have been a wiser use of the space to have thrown the vestibule also into the hall as was at first intended. Much dignity would have been added to the entrance thereby, while the way from the kitchens to the bedrooms would have been even less through the living parts of the hall than now.

Lest you should be inclined to think that only for people living a very exceptional life would it be advantageous to throw so much space into one room, I will next refer to a design drawn for a London literary man, who though not able to afford a large house, still by reason of his position required occasionally to be able to entertain a good deal of society. Here the first consideration has been to obtain a hall which would be at once a comfortable living-room and a dignified entertaining room. The meal-room has been kept as small as would just allow of a little dinner-party being given in it. The fire is placed in one corner, the sideboard in another; had it been possible to put the door also in a corner it would have been still more

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convenient, for in a small dining-room it is in the corners that there is a little space to spare.

The narrow Hampstead building plot, having a south-west aspect, and the best prospect to the south, dictated the general arrangement of the house and the placing of the best room at the south corner. This room is spanned by two arches to carry the wall of the study over, within one of them is placed the fire recess with seats and fitment, thus using up all the space under the stairs to add to the size and character of the room, while the stairs themselves which are shut off from the vestibule by a door are also open to the room, the quarter landing forming a small gallery overlooking it.

The staircase is such an essentially interesting and decorative feature in a house, that it always seems a pity to shut it off in a mere passage, and the space under and around it may be made to add so much to a room both in size and individuality. In old houses the charm of such features is well recognised, for the favourite view, alike for the artist and the photographer, is that which contains some peep of stairs from the hall, some gallery, balcony, ingle, or deep-window recess. When the most is made of such advantages as can be claimed for the bare square room, they seem but a poor compensation for the loss of character and charm.

Over the hall in this house are placed the client's study and bedroom, the two being combined that both may have the benefit of the whole air space, book-cases and curtains screening off the bedroom portion. Double doors and double windows are fitted to this room, for perfect quiet both by day and by night is essential, and further to secure this, ventilation is obtained by means of two fireplaces and an air shaft built in one of the stacks. The client's wife, son, and daughter all proposed to make considerable use of their bedrooms in the daytime.

The elevations are somewhat more elaborate and fussy than we should make them now. One gets tired of seeing half timber stuck about in all sorts of positions, and disinclined to use it even when, as here, some such construction is rather demanded by the roofing.

But I must pass on now to cottages, the second part of our subject. The distinction between a small house and a cottage, never a very clear one, has been further obscured by a common affectation of simplicity. The word certainly suggests a simple shelter for a simple form of life, and for our purposes I propose to regard as a cottage any house in which separate accommodation is not provided for servants. Provision for domestic help there may be, but it must be "as one of the family," not constituting a separate class to be separately provided for.

To cottages, then, all that has been said about the advantage of securing a good living-room, even at great sacrifice of other conveniences, applies with additional force. For not only is the total space at our command usually less, but the number of functions which the living-room has to provide for is greater, many of the functions of a kitchen being added to it. To combine the comfort of a living-room with the convenience for work of a kitchen will tax our skill in planning, and as the space we can give becomes less, our care in the disposal of it must become greater.

Let us again proceed by way of example, taking a largish cottage designed for a client who wished to live a quite simple life; yet on a scale that would allow of his enjoying the more necessary comforts and refinements. The site is near a small Derbyshire town, and consists of a mound caused by the outcrop of some shale grit. On the north runs a stream, down to which the ground falls precipitously; the road is to the west, and there is a steep fall here also; to the east the fall is slight, while to the south the ground rises gently. There are fine views in all directions, most interesting to the north, least so to the south. The client, however, desired the main windows of the living-room to be to the west, having a special liking for the evening light. The site seemed to demand a simple oblong house with plain span-roof kept as low as possible, forming a sort of ridge on the steep-sided mound.

The western end of the building naturally becomes the living room, having plenty of window in the desired direction. There is a window to the north to command the best of the view—not a large one certainly, but one so placed that it is natural to look through it from many parts of the room. A window on the south side admits plenty of sun, and in addition on this side there is the outer door, placed there that it may be possible to enjoy the charm which a door opening direct from a room on to a sunny garden always gives. Such a door must, however, be so placed that while the peep out is obtained the comfort of the room is not destroyed. Here we have gathered the two doors and the stair foot together in a narrow part of the room out of the way, leaving all the rest of the space comfortably to occupy.

The fire is placed on the north wall, in a deep recess, one side being devoted to rest, the other to work. The former is occupied by a comfortable low seat; the latter is devoted to a working dresser, fitted with a small fixed bowl for washing up glass and china, drawers, cupboards, and plate-rack. To save constant running to and from the scullery, a small hatch closed with a shutter is arranged to open on to a wide enamelled shelf, so that saucepans and such like can be handed through. All the kitchen work done in the living room is thus confined to the one corner handy to the fire for cooking, and well lighted by the north window, which does not add any unwelcome heat just there.

The fire is designed to make either a closed cooking stove or a comfortable open fire to sit round, as required. Unfortunately it has to be set in a chimney breast, but by filling the recesses each side with cupboards, book-shelves, and coal-box, and not carrying the seat beyond the face of the breast, part of the effect of this is removed, and some, at any rate, of the charm of an ingle is secured. The floor of the recess is tiled too, which enhances a little the feeling of sitting on the hearth, and at the same time affords the most easily cleaned floor for the working corner. We are enabled to get a sheltered garden seat by reducing the width of the recess to a more comfortable dimension. The ingle is further defined by an archway, on one side of which is fitted a writing desk with closing flap, drawers, and book-shelves, and on the other the piano is designed to stand, occupying part of the space under the rising stairs, the remaining portion being taken up with music cupboard and book-shelves opening into the living-room, and a store cupboard opening into the kitchen. A second lounging place is provided by a wide, low window seat in the main window, and between that and the meal table is fitted a small side table with cupboards and shelves to hold the oddments used at the table. Fixed seats are arranged for two sides of this table, one having a high back to screen it from any draught coming through the outer door.

To this one good room is added a kitchen for the more dirty work, fitted with a small range; a good cupboard for coats and hats by the entrance; a coal-place and larder. Upstairs are four bedrooms, one being rather narrow has a bed-recess taken on the larger room to help it, and as it is over the low ceiling of the ingle it gets the advantage of extra height under the sloping roof, and thus the low ceiling, which adds so much to the feeling of cosiness in an ingle is made to help the bedroom over. Where some such arrangement as this is not possible, we sometimes utilise the space between the low ceiling and the floor above as a storage cupboard, and we often take advanatge of it for ventilation purposes, by bringing fresh air into the room, slightly warmed by passing behind the fire, and delivering it over the opening to the recess, where it is distributed with the least possible draught. Where an outlet into a flue is desirable to supplement the exhaust due to the fire, we find this a very good place to arrange it. In a room with close-fitting iron casements, sufficiently well built not to leak excessively through floors, skirting and door, the most recent cause of a smoky chimney is the want of sufficient air supply, and some form of inlet is an absolute necessity. In bedrooms we have successfully arranged this through a hollow fender kerb in some places.

All the bedrooms in this cottage are so arranged as to have a fairly comfortable corner between the fire and the window, where one can sit to read or write. An east aspect is obtained for the bath-room, and a linen cupboard warmed by the cylinder is provided.

Of the elevations I need only say that local random range stone is used for the ground storey, while for the upper portion the need for obtaining four bedrooms over a house so narrow required the use of 9 in. brick walls, which are rough cast in cement. To avoid the expense of dressed stone, and also to connect a little the two storeys, all the windows have brick jambs and mullions, and the

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rough cast is carried down over them. The roof is covered with local stone slate.

It is obvious that the living-room of this cottage could with much less trouble have been made a four-square room with a fire at one end and a door at another, and might have been furnished with a mixture of kitchen and parlour furniture; but I shall have rather sadly missed the purpose of this paper should you not now feel, as we do, that life would be immensely more comfortable and more dignified in a room such as I have been describing, where each requirement has been considered and provided for, and where just the shape and arrangement have been given to it which seemed best to meet those requirements; where, moreover, all the furniture has been designed in keeping with its place and its purpose, so that there is no incongruity between the desk and the dresser, the piano and the plate-rack.

Time will not permit me to refer in detail to any smaller cottage plans, but enough has, I hope, been said to make it quite clear that, whatever the size of the house, we think it should grow, both as a utilitarian plan and as an artistic creation, out of the real needs of the occupants; and that the art of designing small houses and cottages consists, not in following any accepted code of conventions, however useful these may be in their place, but in working out such a convenient and comely setting for the special life that shall be lived in them as shall enable that life to expand itself to the fullest extent, not merely unhampered by the building in which it is clothed, but actually stimulated by a congenial surrounding.

BRITISH ARCHÆOLOGICAL ASSOCIATION.

AT the meeting on January 30th, Dr. W. de Gray Birch, F.S.A., in the chair, Mr. R. H. Forster gave a very interesting lecture upon the Roman Wall, which was illustrated by over 50 lantern slides, many of which were prepared specially for the purpose. After a short description of the situation and design of Hadrian's Wall and a brief statement of the questions concerning the wall and the earthen vallum, the views were shown illustrating the chief portions which still remain. The series began with the most easterly fragment of the wall, near Heddon; and this was followed by three views near Downhill in the neighbourhood of Corbridge, where the vallum makes a sudden bend and skirts the south side of the hill, while the wall keeps to the northern brow—at this point an ancient road has recently been discovered, cutting through the vallum; and it has been suggested that the road is Roman, and the vallum therefore of earlier date than the wall. Downhill, however, has been extensively worked for limestone at an early date, and it is hardly possible to assign a definite date to many old roads and tracks which lead to it; even if the road in question be Roman, the lecturer considered that fact did not prove what is alleged; for the Roman occupation lasted for nearly three centuries, and probably the vallum was not kept in repair after the province south of the barrier had settled down.

Several views were shown of the remains at Cilurnum (the Chesters), including the flagstone pavement recently exposed in the Forum, from which inscriptions may be possibly recovered, if the lower sides of the stones are examined; also the larger eastern gateway, with the wall coming up to its southern side, so that this gate, as well as the north and main west gates, opened on the northern side of the defences possibly to enable cavalry to issue with greater speed from the fortress. Cilurnum was garrisoned by the second ala of Asturians.

Views were shown of the large suburban building between Cilurnum and the North Tyne, which has been described as a bath or a temple, but was probably a villa. The largest chamber has a row of seven niches, which perhaps originally held statues representing the seven planets and seven days of the week; in size and in appearance they resemble the niches of the reliefs discovered at Plumpton in 1813, which represent five of those deities (Lapidarium Septentrionale, page 411, No. 805). Another view showed the alcove opening out of the long chamber, with the lower part of its window, below which many fragments of glass were found. At the back of the villa is a space bounded by three walls and open behind; it seems to have been roofed over, and in one corner is a hatch or small window, opening on the floor level of one of the rooms within, and below this hatch the hypocaust is brought outside the building, forming a kind of table. It was suggested that the space was the kitchen of the villa, and that the hypocaust formed a kind of "hot plate" on which the dishes were placed before being passed through the hatch to the triclinium.

A series of views of Borcovicum were next shown, beginning with the gate in the valley on the east of the fort, formerly supposed to be a means of access to the so-called amphitheatre on the north of the wall; this, however, has recently been proved to be merely an old quarry, and the purpose of the gate was evidently strategic. Views of the east, west, and north gates of the fortress were exhibited, as well as of the recently excavated prætorium, and the fine water tank in the south-east corner. Views of the Housestead, Mile-Castle, showing how the massive north gate was partially walled up during the latter part of the Roman occupation, and several views of the remains of the wall on the basalt hills beside the Northumbrian Lakes were shown. Attention was directed to the manner in which, at the gaps in the line of hills, the wall is drawn back so as to command both flanks of an attacking-party, and also to the sudden changes of thickness which occur at many points. Dr. Bruce's theory—that these show the places where the working parties joined up their sections—seems insufficient.

As a rule the insets go in pairs, forming a shallow recess in the south side of the wall, generally less than a foot deep, and from twenty to two hundred feet long, and in many cases the lowest course is not set back at all. Just east of the Housesteads Mile-Castle the breadth of the wall changes seven times in 130 feet. The series of views ended with that of the last fortress of which the name can be identified.

In view of the forthcoming Congress at Newcastle-on-Tyne, the lecture was much appreciated.

SOCIETY OF ENGINEERS.

THE first ordinary meeting of the Society of Engineers for the present year was held on the 4th inst. Mr. Henry O'Connor, the president for 1900, occupied the chair, and presented the premiums awarded for papers read during that year:—The president's gold medal to Mr. Henry C. H. Shenton for his paper on "Recent Practice in Sewage Disposal"; the Bessemer premium to Mr. Richard F. Grantham for his paper on "The Closing of Breaches in Sea and River Embankments"; a society's premium to Mr. C. Rous-Marten for his paper on "English and French Compound Locomotives"; and a society's premium to Mr. Robert Henderson for his paper on "Paper-Making Machinery."

Mr. O'Connor then introduced the president for the present year, Mr. Charles Mason, to the meeting, and retired from the chair, receiving a hearty and unanimous vote of thanks for his services during the past year.

The president then proceeded to deliver his inaugural address. In it he commented upon the opening of a new century, and although not making a review of the engineering profession during the past 100 years the main subject of his address, he dwelt briefly upon the marvellous progress made. As illustrations he mentioned the works of the present day as compared with those designed for the same objects at the beginning of the century. Engineers of the present day should not forget the skill and talent displayed generations ago in the construction of such monuments as the Pyramids, Stonehenge, and numerous Roman and other remains still in existence. The practice of a municipal engineer was next referred to, with special reference to work in large towns, including the repair and maintenance of sewers and pavements, and the construction of subways for accommodating the numerous pipes and wires laid beneath the street surfaces. Surprise was expressed that more headway had not been made with regard to the general adoption of a scheme of subways for London, the few now existing being frequently too small for the purposes they were intended to serve. An ideal subway was described by which the entire width of the street should be occupied, and the president observed that, although the cost and difficulties

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of construction would be great, if some scheme of rental, based upon the present expenses incurred in continually opening up and making good the street surfaces, were arrived at and devoted to payment of interest on capital, a good return would result. Cremation was referred to as a subject worthy of the special study of those interested in municipal engineering and as a system which was likely to be introduced generally in the near future. He predicted that before the middle of the present century every town and borough in the country would have a crematorium as part of its general equipment. The science of heating and ventilation was discussed with special reference to domestic heating, and to the small extent to which well-known and efficient systems of heating had been adopted in private houses, old associations and cheap fuel being the prime causes of want of progress in the matter. The advantages and disadvantages of warming by steam, hot water, and hot air were stated, the president pointing out that it was impossible to adopt the same principle for all buildings. Steam, he said, as a heating medium was not adapted for warming private houses, churches, or institutions where skilled labour was not permanently employed. In such buildings low-pressure hot water formed a far better system, being more easily managed and not requiring such constant attention. Ventilation was closely allied to and dependent upon heating. The introduction of an ample supply of pure fresh air was the main consideration in arranging any system (whether natural or mechanical), without allowing such air to become overheated or to cause draughts on its admission into the apartment.

A hearty vote of thanks was accorded to the president.

THE LONDON WATER COMPANIES' REGULATIONS.

A CONFERENCE of representatives of the London County Council, the City Corporation, the City of Westminster, and the councils of the Metropolitan Boroughs was held on Monday afternoon at the County Hall, Spring Gardens, for the purpose of considering the amended regulations of the Metropolitan Water Companies, in view of the Local Board inquiry which is fixed for Monday next. Mr. W. H. Dickinson, Chairman of the London County Council, presided, and there was a large attendance.

The Chairman, in explaining the objects of the meeting, said the proposed new regulations, if adopted, would affect almost every individual householder in London. They could not in the least foresee the amount of the expenditure which would be forced upon the inhabitants of London and the suburbs if these regulations were successful. The County Council had tried to get roughly some idea of what the cost to the individual householder would be. They had taken a house at a rateable value of £45, and in that instance they found that it would cost £53 to carry out the regulations. In another house, with a rateable value of £250, the cost would be £85, and if it had not a proper system there would be £125 new expenditure. But, perhaps, the most striking instance occurred in the case of a block of artisan dwellings in course of construction. In that case they had estimated the cost of the water fittings under the old and the proposed new regulations, and they found that, whereas the cost under the old regulations would be £60, under the new regulations it would be £125, or £65 more. If that kind of thing was to apply to all the houses in London, as it undoubtedly would to a very great extent, the situation for Londoners at the present time was one of very great seriousness. There could be no doubt that these regulations had evoked the hostility not only of the County Council, but of the borough councils. The Royal commission last year had brought to their notice the fact, which everybody who had studied the London water question knew of, that there was an enormous amount of waste of water going on in the metropolis. This waste was to a large degree to be attributed to the fault of the companies, in not properly carrying out the powers they possessed. The quantity of water supplied in London in July last was 247,000,000 gallons a day, and if all the companies carried on their work in the same way as the Kent Company the amount required would have been only 222,000,000 gallons per day, or a saving of 25,000,000 gallons. To his mind that was the question to which the water companies ought to have applied their minds long before they set to work and asked for further powers of this extraordinary kind connected with the construction and management of private houses. The Royal Commission had reported in favour of the purchase of the water companies' undertakings by some public authority, and there could be but little doubt that the Government would very shortly take up the question and deal with it. It, therefore, seemed a very inexpedient moment for the companies to ask for further powers, when there might be further change when the companies came into the hands of a public authority. The only effect which the passing of these regulations would have, would be to place the companies in a much better position before the arbitrators, in regard to the price which would have to be fixed for purchase. No doubt some of the companies were now very near the end of their resources, and if they had further new powers given to them in the way of preventing waste it would only make their financial position stronger. He believed that in such an important matter the representatives of London as a whole would do their duty in protecting the interests of the people of London.

Mr. McKinnon Wood then moved—"That the Local Government Board be requested to adjourn the inquiry, seeing that the Government had intimated their intention of introducing a Bill in the Session of 1902 dealing with the water question." He said the object of the water companies in bringing forward these regulations at the present moment must obviously be to increase the amount they would receive in the event of purchase. He thought the conference should begin its proceedings with an emphatic protest against this, in the interests of the consumers.

Mr. Shaw Lefevre seconded the resolution, which was then carried.

The conference decided to oppose the proposed extension of the definition of communication pipe, on the ground that such an alteration would enable the company to prevent the repair of a defective communication pipe and to require the substitution of a new one. Another of the new regulations requires that there shall not be more than one communication pipe to each house. The conference thought that branches from a communication pipe should not be deemed to be separate communication pipes. They also considered that the new regulation requiring that every house, with certain exceptions, should have its own communication pipe should be struck out and the old regulation substituted. The new regulation requiring every house, or, in the case of flats, each suite of rooms, to be provided with a cistern of a size to hold an amount of water equal to 25 gallons per room was the subject of much opposition. The conference finally decided unanimously to oppose the regulation with a view to its being struck out.

JOTTINGS.

PAUPERS in Dudley Workhouse have increased in number to such an extent that the Guardians have found it necessary to provide extra accommodation at an estimated cost of £63,000.

THE Public Health Committee of the Ayr Town Council, have decided to appoint Mr. John Eaglesham, Ayr, as architect for the new infectious diseases hospital to be erected by the Corporation. The hospital is to cost about £23,000.

A LARGE clock has just been erected in the Chatham Parish Church, Northumberland, by John Smith & Sons, Midland Clock Works, Derby, and the same firm are now making a very large clock and chimes for Beverley Minster, which will strike the hours upon a bell of between five and six tons weight.

MR. JAMES OGDEN, an ex-member of the Rochdale Town Council, has offered £4,000 to the town for a new picture gallery. It is stipulated that the money shall be invested for ten years, and that the Corporation shall spend not less than £200 a year during that period on pictures of merit for the gallery.

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The British Architect.

LONDON: FRIDAY, FEBRUARY 15, 1901.

AGAIN THE HOUSING QUESTION.

EVER since King Edward served on the Royal Commission on the Housing of the Poor in 1893 he has shown a real and constant interest in the subject. It is no matter for surprise, therefore, that in his reply to the address of the London County Council on Wednesday he should have directly referred to it. The reference is made in the last paragraph of the reply alluding to the work of the County Council, but we may as well quote the whole of His Majesty's remarks as they constitute a right Royal tribute to the useful work already achieved by the Council. It runs as follows:—

"I receive with much satisfaction this expression of your loyalty and goodwill to myself and my Consort; and the tribute which you justly pay to the virtues and excellences of my dearly-beloved parents is very grateful to my feelings and to those of my family. The development made in the government of London constitutes one of the most important features of the reign of her late Majesty. The good work done by you and your predecessors and coadjutors in municipal administration has resulted in an improvement in the health and conditions of a vastly-increased population which testifies to your well-directed zeal. In the discharge of your onerous duties, which closely concern the welfare of millions of my people, I am confident that you will not slacken in the efforts which you have made, and are making, for dealing satisfactorily with the many difficult questions which await your consideration, and especially with that of the proper housing of the working classes, which is one in which I have always felt the deepest personal interest."

We welcome this Royal appreciation of the Council's work, because so much of it has had to be done in the teeth of a strong political atmosphere and influence, which are not, as a rule, conducive to the health and progress of municipal government. But we receive with special satisfaction the King's assurance of "his deepest personal interest" in a subject which so closely affects the well-being of so large a section of his subjects. And we are perfectly sure if he could have listened as we did to the conversation of a third-class carriage full of policemen on the Underground Railway, on the morning of his opening Parliament, relative to this very question it would have considerably deepened that personal interest therein. The great disabilities under which all classes of the community labour who cannot afford to spend more than from six to ten shillings a week in rent are comparatively little understood by those who have not encountered them in their own personal experience. But we may at least venture to hope that since the King maintains a real personal interest in the question, neither our imperial nor municipal parliaments can afford to treat it as one that may be conveniently shelved, or dealt with in a perfunctory sort of way.

Some of the difficulties experienced by the police force in the metropolis were well explained by the policemen above referred to. One, with a wife and four children, cannot find any suitable place, at a reasonable rent, in the district in which he is employed. The consequence is the wife and children are housed in another locality, and he has to make shift as best he can. Another pays five shillings a week for a single room. And so on. It is, unfortunately, no singular experience, but is the universal complaint of the working classes in London.

The remedies are hard to find. But Mr. Charles Booth, in his address on the subject at the Westminster Palace Hotel, on Monday last, urged two of the apparently most reasonable ways out of the difficulty, viz., the acquisition of land for house-building, the local authorities buying the land and either allowing private enterprise to build the houses or doing so themselves, and the improvement of the facilities of locomotion without any public speculations in land or houses being entered into. The latter was the proposal Mr. Booth specially advocated, urging that with improved locomotion the evils became capable of cure, whereas without it all other proposals would be impracticable or ineffective. Consequently, he maintained that it was the first, if not the only, thing needful, to promote expansion in all directions by the means of a properly organised network of cheap and rapid means of locomotion—not in this or that, but in all directions. This is a very convenient proposal, no doubt, though the vista it opens up of "a large and really complete scheme of railways underground and overhead, as well as a network of tram lines on the surface—a system extending beyond the present metropolitan boundaries into the outskirts of London, wherever the population had gone or might go," is not a particularly enchanting one. Moreover, a wholesale introduction of workmen's trains, with fares averaging about 2d. for a return journey of, say, 20 miles, as is now the case between Liverpool Street and Enfield Town, would be a serious matter for the railway companies to entertain.

We think the needed reforms will have to be conducted upon moderate lines. The London County Council have shown themselves to be very much alive to the real importance and needs of the case, and their action cannot but stimulate efforts in other directions and by other bodies. They have already much improved the tram service where they have taken over the lines, and have also, in their deliberations on the housing question, thoroughly recognised the principle contained in the resolution passed by the meeting which Mr. Booth addressed:—"That a complete system of transportation, radiating from congested centres, which shall be cheap, rapid, and owned by the London County Council, is a primary step towards dealing with the Housing Problem in London." But even the County Council has to consider the question of finance, and the financial difficulties in the way of the realisation of such a proposal as that contained in the resolution above quoted are enormous. Yet, if such a scheme could be carried through, the advantages to the working classes of London would be great indeed. This millennium of travel in London is not yet, however, at hand.

But, on the whole, taking one thing with another, the future of this vitally important question is, we think, brighter with the hope of some practical solution than has been the case for some years past.

THE R.I.B.A. ADDRESS OF CONDOLENCE TO THE KING.

THE Council of the Royal Institute of British Architects have unanimously approved of an address of condolence to the King on the death of her late lamented Majesty Queen Victoria, and which is to be read at the Institute meeting next Monday evening. The address is as follows:—

"We, your dutiful subjects, the president and council, on behalf of the members of the Royal Institute of British Architects and of the societies both in the British Islands and the colonies in alliance therewith, beg leave humbly and respectfully to approach your Majesty, and to offer our deep and heartfelt sympathy in the inexpressible loss your Majesty, the members of the Royal Family, and the nation have sustained by the death of your Royal mother our late Most Gracious Sovereign Queen Victoria of glorious memory. Her late revered Majesty encouraged with her Royal and generous patronage the art that is so dear to us, and we mourn with deepest sorrow, not only in common with the rest of the British Empire our beloved ruler, but also the gracious and beneficent patron of the Royal Institute throughout the whole length of her long reign. We most respectfully and dutifully tender to your Majesty our sincere devotion and loyalty on your accession to the throne, and earnestly pray that the Almighty will grant your Majesty and your Royal Consort Queen Alexandra, a long, happy, and glorious reign during which the nation may prosper, the arts flourish, and your Empire enjoy all the blessings of peace."

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NOTES ON CURRENT EVENTS.

THE formulating of a scheme for providing Liverpool with a cathedral worthy of so vast a centre of population may be said to have been advanced a stage further. The bishop of the diocese (Dr. Chavasse) having brought together a body of well-known gentlemen to consider matters, an executive committee was eventually appointed to deal with such questions as site, and, as far as possible, plans, with a request that they would report thereon to the larger body. So far as the site is concerned, it is understood that this has been decided upon, and efforts are being made to get some prominent gentlemen associated with the city to open the subscription list. Pending this it is stated that nothing will be made public, but it is hoped that early next month the committee will make their proposals known. Meanwhile it would be interesting to know what the committee meditate doing in regard to the question of "plans," as they call it. Will they fall back on the designs submitted in the abortive competition of years ago, or institute a new competition? The latter would be the most satisfactory, for it would give the later generation of architects a chance.

LORD ROSEBERY'S proposal that Linlithgow Palace should be restored as a memorial of Queen Victoria has caused a considerable amount of discussion in Scotland, but we do not hear that it has excited any great enthusiastic advocacy. Probably the fact that there would be little or no utility in such a project, so far as Royalty was concerned is against the scheme, whilst the amount of restoration required to make the building really habitable would very likely be regarded as undue interference with it as a piece of historic architecture. Some there are, too, who might consider the restoration of the birthplace of Mary Queen of Scots as constituting a memorial to a Papist Queen rather than of the Protestant Queen Victoria. The palace, which was burnt in 1746 by Hawley's dragoons, is roofless, but from time to time the Scottish Office of Works have made spasmodic efforts at some repairs here and there.

THE report of Mr. J. J. Burnet, A.R.S.A., the assessor in the competition for the reconstruction of Ayr Town Hall was read at a private meeting of Ayr Town Council on Monday. Mr. Burnet reported that the arrangements, both of the court-house and police department and of the hall in No. 1 design, appeared to him so good that he had no hesitation in placing it first. The Council unanimously adopted the recommendation of the assessor, and resolved to proceed with the erection of the hall. The successful design is that of Mr. J. Kennedy Hunter, architect, Ayr, and the cost of carrying it out will, according to the estimate of the measurers, Messrs. Douglas, Hunter & Whitson, Glasgow, amount to £9,515. The hall, with its principal accessories, will be comprised within the four walls of the original building, and its total seating accommodation will be 1,078.

THE competition for a new infectious diseases hospital at Sevenoaks attracted 46 competitors, but the result can hardly be regarded as satisfactory. Mr. Keith D. Young, F.R.I.B.A., the assessor, having considered the designs, whilst placing the one marked "Lucidity" first in order of merit, has reported that, in his opinion, none of the designs would be approved by the Local Government Board without considerable modification. He also stated that the cost of "Lucidity's" design would be considerably in excess of the estimate of £8,348 18s. 9d. submitted. As a consequence of this report the Urban District Council are further consulting Mr. Young, whom they have informed that they cannot at present accept the design recommended by him.

THE Cardiff Asylum competition has been decided. The five sets of designs submitted by Messrs. Wills & Anderson, Swansea; Messrs. Greenway & Newbury, London; Messrs. Law & Allen, London; Messrs. Hooley & Sanders, Nottingham; and Messrs. G. H. Oatley & W. S. Skinner, Bristol, have been duly considered and reported upon by Mr. George T. Hine. Mr. Hine has awarded the first premium of £500 to Messrs. Oatley & Skinner, each of the four unsuccessful competitors receiving an honorarium of £100. The successful firm will, it is expected carry out the work. If they do, the £500 is to merge in the commission of 5 per cent. on the cost of the building. That is to say the £500 premium becomes a myth—and, in a manner of speaking, a delusion and a snare.

COMPETITIVE designs are invited by the Stretford Urban District Council, for new public swimming baths to be erected at Old Trafford. Three premiums of 30 guineas, 20 guineas, and 10 guineas are offered. Conditions and instructions are obtainable from Mr. G. H. Abrahams, Council Offices, Old Trafford, Manchester, on payment of £1, repayable on receipt of a *bona fide* design. April 1st is the date for sending in the designs.

THERE is to be another competition in Sunderland in all probability. This time it is for new police buildings, and it is proposed to invite competitive designs, premiums of £100, £50, and £25 being offered for the three placed first in order of merit. The competition is, however, in abeyance for a short while, pending the settlement of the question of site.

WE learn from the *R.I.B.A. Journal* that a correspondence has taken place between the Council of the Institute, Messrs. Boardman & Son, F.R.I.B.A., of Norwich, and the president and secretary of the Norwich Union Life Office, with regard to the limited competition for their new offices. The *Journal* says:—"The conditions were in every way unsatisfactory, inasmuch as no premiums were offered, no guarantee that any design would be accepted, no provision made for compensating competitors if the buildings were not erected, and no independent architect of standing appointed assessor. The assessors were a firm of surveyors, the 'regular professional advisers of the Board in such matters.' Messrs. Boardman & Son very properly declined an invitation to compete, on the ground that the conditions were not in accordance with the principles laid down by the Royal Institute in the 'Suggestions.' In response to the Council's representations, we regret to say that the Norwich Union Life Assurance Society neither admitted the right of the Royal Institute to address them on behalf of the profession with regard to their competition, nor could be brought to see any reason for modifying their amazing conditions."

IT is stated that the Lord Mayor having approached the King with regard to various communications which he has received from various quarters respecting a national memorial to Queen Victoria, his Majesty has suggested that a small committee should be formed from members of the present and late Governments to consider the matter, with a view, if possible, of deciding what form the memorial should take, and to nominate a representative committee further to develop and carry out the scheme.

AT the Royal Institute of British Architects' meeting on Monday evening next, the 18th inst., the Address of Condolence to be presented to the King by the President and Council on behalf of the Institute will be read. The next item on the agenda is "to make an announcement concerning the Royal Gold Medal for the year." Afterwards there is the election of seven Fellows and twenty-three Associates, and of Sir L. Alma-Tadema as Hon. Fellow. Then Mr. George T. Hine is to read a paper on "Asylums and Asylum Planning."

THE Architectural Association of Ireland at their meeting, held on the 5th inst., passed a resolution of condolence with the King on the lamented death of Queen Victoria. Afterwards a lecture dealing with the history of Mont St. Michael, in Normandy, was given by Mr. P. J. O'Reilly, illustrated by some sixty lantern views. A very hearty vote of thanks was passed to Mr. O'Reilly for his extremely interesting lecture.

THE members of the Edinburgh Architectural Association made the first of their series of visits for the session on Saturday afternoon, when they made a round of the Royal High School, the Old Tolbooth, Canongate, and Canongate Parish Church. While visiting the High School, the company gathered round the bust of the King as a boy which adorns the exhibition hall, and joined in singing the National Anthem.

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A PAPER on "The Art of Engraving" was read on Monday night at a meeting of the Architectural Section of the Glasgow Philosophical Society by Mr. J. C. Annan. Mr. Annan described and explained the various methods, and touched historically upon each process. The works of the greatest exponents of the different methods was illustrated by the aid of a fine series of lantern views.

THE subject of "Wall Coverings" was treated of in three papers read before the Glasgow Architectural Craftmen's Society on the 8th inst. Mr. Colin Sinclair, hon. secretary, treated the subject of "Limes" and their application to wall surfaces, drawing special attention to the successful use of hydraulic lime plaster, as perfected by Mr. Alex. McAra, Glasgow, by his process in the preparation of Arden lime for this purpose. Mr. Robert W. Horn, A.R.I.B.A., confined his remarks to the use of "Cements" as plasters, and made clear, in an interesting manner, the various uses of "Petrifite" in its numerous functions. In the third branch of the subject Mr. David Jackson, modeller, lectured on "Patent Plasters," speaking of such forms as Keene's, Robinson's, and Parian cements, adamant, etc., and gave some useful information with regard to fibre plaster and the casting of such, with special reference to its use in the Glasgow International Exhibition.

A JOINT meeting of the Council of the Dundee Institute of Architecture and a committee of the Graphic Arts Association was held in Dundee on Monday to consider the revival of the proposal to substitute a crown for the cape-house on the old steeple. From evidence submitted, the meeting was of opinion that it had been the original intention to finish the old steeple with a crown. It was agreed to have further investigation made into the artistic architectural and constructive value and merits of the proposal.

HERE is a "gowf" story. Our King, it seems, is unable to appreciate the solemnity of the ancient and royal game of golf. One of the caddies at St. Andrew's can occasionally be drawn into expressing his views upon golfers upon whom he has attended. But he is no respecter of persons, for when his opinion was asked on the merits of the then Prince and Mr. Balfour, he replied gravely. "Aye, I mind the names. They'all hae muckle to learn. I telled the Prince so but he only laughed. Ye can no laugh an' play gowf weel."

MR. DONALD ALEXANDER GOW, the architect and superintendent of works to the George Heriot's Trust, died on Monday last, after a long illness. The deceased, who was 45 years of age, was a native of Perthshire, but served his apprenticeship in the public works office in Glasgow. About 20 years ago he received an appointment under the Heriot Trust, and in 1889 he was appointed superintendent of works.

THE Glasgow Exhibition Executive Committee have commissioned Mr. Albert Hodge, sculptor, London, to design a full-length statue of the King, for erection under the main dome of the exhibition. The figure is to be 16 ft. in. height, representing his Majesty in Field Marshal's uniform, with robes of State, as at the opening of Parliament. The King has been approached for his formal assent, and the committee await his Majesty's decision. Mr. Hodge is now in Glasgow, making provisional arrangements. His model has received the committee's approval.

AMONGST the recent elections to the Athenæum Club—under the provisions of Rule II. of the club, which empowers the annual election by the committee of nine persons "of distinguished eminence in science, literature, the arts, or for public services"—we note the names of Mr. Edwin Austin Abbey, R.A., and Professor James Alfred Ewing, F.R.S., Professor of Mechanism and Applied Mechanics in the University of Cambridge.

THE first day's sale of pictures and drawings and remaining works of the late Mr. E. M. Wimperis, Vice-President of the Royal Institute of Painters in Water Colours, on Saturday last, produced £3,322 1s. 6d. Monday's sale realised £1,566.

THE celebrated pair of portraits by Vandyck which were purchased at the sale of the Peel heirlooms last year by Messrs. Agnew for the sum of 24,250 guineas have just been acquired from them by the authorities of the Berlin Museum. The pictures, says the *Times*, which are masterpieces of Vandyck's Genoese period, were bought for Sir Robert Peel from the Balbil family in 1828 on the advice of Sir David Wilkie; and when Sir Robert's son sold the bulk of his father's collection to the National Gallery these remained the chief ornaments of Drayton Manor. Traditionally known as members of either the Balbi or the Spinola family, the portraits are now believed to represent Bartolomeo Giustiniani and his wife, with whom Vandyck is said to have lodged on his first arrival in Genoa—a point which will doubtless be cleared up by the German scholars into whose keeping they have now passed.

THE collection of pictures in the Scottish National Portrait Gallery is steadily increasing. Sir Charles Bruce, K.C.M.G., has just lent several notable works. These include portraits of Charles I. and his Consort, Queen Henrietta Maria, by Van Dyck, presented to Sir Thomas Hope of Craighall by the King himself; a group of portraits by Jamesone, the "Scottish Van Dyck"—he was a pupil of the great master; and three examples of the work of Allan Ramsay, son of the poet of that name.

THE Royal Academy have petitioned the London County Council respecting the proposed tubular railway extension under Hampstead Heath as follows:—"We, the undersigned members of the Royal Academy, do most earnestly petition the London County Council to oppose the above Bill, in so far as it affects Hampstead Heath. We should deplore any tunnelling under the Heath, and the erection of any railway stations and other railway buildings within the boundaries of the Heath, the wild aspect of which is of incalculable value to London and to all lovers of natural beauty." The petition is signed by the following:—Edward J. Poynter (president), Ernest Crofts (keeper), Briton Riviere, William D. Yeames, Val Prinsep, Thomas Brock, B. W. Leader, Andrew C. Gow, Seymour Lucas, Hamo Thorneycroft, W. Q. Orchardson, J. MacWhirter, Frank Dicksee, John S. Sargent, H. H. Armstead, Fredk. Goodall, George D. Leslie, E. Onslow Ford, Alfred Gilbert, G. Aitchison, J. C. Horsley, Fred. A. Eaton (secretary). It will be noted that the signatures only include one architect-member, Professor Aitchison. But it is to be presumed and hoped the other architect-members are not out of sympathy with the terms of the memorial.

THE painted ceiling in the Montgomery aisle of Largs Old Church was the subject of a paper read before the Society of Antiquaries of Scotland, on Monday last, by Mr. Andrew W. Lyons, architect. Mr. Lyons presented a drawing of the ceiling, made to scale, to the museum in 1897. The roof, which is about 29 ft. by 24 ft., is barrel vaulted and lined with wood, painted on the under faces of the board with a most elaborate and beautifully designed and executed series of subjects historical, emblematical or heraldic, arranged in 41 compartments divided from each other by imitation mouldings painted in monochrome. The central panel contains a mantled escutcheon, charged with the quartered armorial bearings of Montgomery and Eglinton, impaled with those of Douglas and Mar, surmounted by a knight's helmet, crest, and motto. One of the larger panels has a representation of the Temptation in the Garden of Eden.

THE salary of Commander Wells, chief officer of the Metropolitan Fire Brigade, has been increased from £900 to £1,000 a year.

THE manager appointed by the London County Council at their meeting on Tuesday for the new housing department is Mr. S. G. Burgess, secretary and manager to the Middle Class Dwellings Company, Rowton House, Limited, and Wharncliffe Dwellings Company, Limited. The salary fixed is £800 per annum. There were 117 applications for the appointment.

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IN the examination for Sanitary Inspectors under the Public Health (London) Act, 1891, held in January, 1901, under the auspices of the Sanitary Inspectors' Examination Board, the following candidates were successful:—Misses G. D. Bevan, I. W. Cox, G. A. Looker, L. L. Spiller, and Messrs. V. E. F. Donnewald, A. Griffiths, R. E. James, C. W. Rudd, A. H. Walker, and A. Wheaton.

WE are very glad to note that the questioning of the widening of Hampstead Road at its junction with Euston Road and Tottenham Court Road is being made a public one, and that the meeting held at Tolmer's Square Institute on Monday evening last was not only crowded to excess but perfectly unanimous in passing the following resolution:—"That, in the opinion of this meeting, the great and continuous increase of traffic renders it imperative that the Hampstead Road be widened at its junction with the Euston and Tottenham Court Roads." The resolution, which was moved by Mr. W. R. Cremer, M.P., and seconded by Lord Elcho, voices the opinion of not only those present at the meeting, but of all the thousands who daily "pass that way," as well as of those who consider the subject from the more critical or professional view of street improvements as such. We are glad to see that there is such a strong local interest taken in the question, and that the Provisional Committee (of which Mr. E. A. Jenkins, 67, Hampstead Road, N.W., is the hon. secretary), is so influentially constituted and supported. Their efforts have our entire sympathy and support.

THE rating of that great pile of buildings facing Sloane Street and looking on to Hyde Park known as Hyde Park Court, came before the London Quarter Sessions on Wednesday. It appeared that the company carried on the business of an hotel and club with furnished and unfurnished residential chambers, and that they purchased the property in 1898 for £218,000. Mr. Boyle, K.C., who, with Mr. Talbot, represented the company, stated, in opening the case, that the valuation list appealed against was a gross value of £11,000, and a rateable value of £9,167. A large number of expert witnesses were called on both sides, and after hearing Mr. Danckwerts, K.C., who appeared for the assessment committee of St. George's Union, the Court allowed the appeal with costs, and reduced the gross value to £9,900 and the rateable value to £8,250.

THE assessment of that historic mansion, Montague House, Whitehall, the town residence of the Duke of Buccleuch and Queensberry, after remaining for 10 years at £4,200 gross, and £3,500 rateable, was raised by the Local Assessment Committee last year to £5,500 gross and £4,584 rateable; and the justices sitting at the Sessions House, Clerkenwell, to consider appeals against valuations the other day altered the figures to £4,500 gross and £3,750 rateable, the costs to be paid by the Council of Westminster.

THE conference on the question of the housing of the working classes held in Manchester on Saturday last, under the auspices of the National Housing Reform Council, and the Lancashire Federation of Trades Council, was, we are informed, very well attended and very representative. This may be so, but we do not see that the discussion evolved anything new in the way of ideas, or in the way of practical remedies for existing evils. A resolution of the usual type was unanimously passed, recognising the pressing need for housing reform, urging the local authorities to vigorously use the powers they already possess under the Housing of the Working Classes Act, 1890, to borrow money for the purpose of acquiring land and erecting comfortable cottages and tenements thereon, and in this way not only securing an increased supply of suitable houses for the people, but also rendering possible the compulsory clearing of slum areas. One little bit of forward movement was contained in the second resolution passed by the conference proposing the formation of a "Manchester, Salford, and District Housing Reform Council," for the purpose of steadily working, on non-party lines, for practical housing reform.

SINCE the disastrous fire in Cripplegate some three years ago, the group of insurance companies known as the tariff offices have introduced what is called the block rate, under which the amount insured is to a certain extent limited. In the inner and outer wards of Cripplegate meetings of inhabitants have been held for the purpose of obtaining better conditions from the insurance offices concerned, and it is proposed to memorialise them on the subject. The memorialists point out that in the premises rebuilt since the great fire the staircases are mostly of stone, that wood-lined walls and ceilings have been discarded in favour of fire-resisting plaster, and that skylights have been largely abolished owing to the facilities they offered for increasing the draught in case of fire. The fire offices, it is declared, informed property owners after the fire that the block rate was only introduced as a temporary measure in order that the companies might recoup themselves. The memorialists consider that the time has arrived when the whole question should be reconsidered. They assert that the block rate operates to the serious depreciation of property.

THE Improvements Committee of the London County Council reported on Tuesday that in connection with the Holborn to Strand improvement they had acquired the leasehold and trade interest in the licensed house known as the Coach and Horses, 323, 324, and 325, Strand, for the sum of £82,200.

IN July last an agreement was made under which the principal London cement merchants agreed, as our readers may perhaps remember, upon certain arranged terms, to take their whole requirements of cement from the Associated Portland Cement Manufacturers, Limited. After the agreement had been in operation about six months, the latter gave the merchants notice that they were advised that the agreement was not enforceable. The merchants took counsel's opinion, which laid down that the agreement was enforceable, but the merchants, after considering the difficulties in their way, and the "critical and disorganised state" of the cement trade in London, decided not to enforce their contention. Consequently they have agreed, under protest, to the agreement being cancelled. There is considerable feeling in the trade on the subject; and Mr. G. E. Wragge, chairman of the Associated Cement Merchants of London, 47, Belvedere Road, S.E., in a letter to the daily press, complains that "this agreement, which was drafted entirely by the manufacturers, and which at any rate was distinctly the understanding upon which the merchants were to be supplied with their cement, should now be repudiated by the manufacturers."

AT the London County Council meeting on Tuesday, on the report of the Housing Committee, Mr. Goulding, M.P., drew attention to a decision of the committee to hand over to contractors the work of building several blocks of dwellings for the working classes instead of handing the plans first to the works manager for his option to take the work for the Works Department. This, he claimed, as a justification for the policy always advocated by the Conservative members, that the work of erecting working-class dwellings could be executed more expeditiously and cheaply by contractors than by the Works Department. After a short discussion Mr. Waterlow (chairman of the committee) explained that the committee had full power to utilise the services of contractors if they thought it desirable. In the cases now before the Council they had resolved to put them out to contract in order to avoid any possible delay.

ENGINEERING AND SANITARY NOTES.

BY CHAS. E. GRITTON, A.M.I.C.E.

WATER SUPPLY EXTRAORDINARY.

WINCHELSEA, one of the ancient Cinque Ports, prides itself on its antiquity, and lives chiefly in memories of the past. The other week I discovered there a marvellous piece of plumbing work, unequalled, I should think, in this or any other country. The supply pipe from the water company's main, after wandering across the

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wooden floor of the sitting-room, unconfined, somewhat like a huge snake, delivers water by means of a disorganised ball-cock to an iron cylinder (intended for *hot* water). From this an overflow pipe discharges on to the sink. A draw-off tap is thoughtfully provided several inches *below* the sink level. The whole is supported by a common kitchen chair, and constitutes the *only* water supply to this house! The name of the genius responsible for this masterpiece of water-supply arrangement is pronounced Duffer, or something that sounds like that. At any rate 'twill serve very well.

SILICO-CALCAREOUS SANDSTONES.

To those desiring to know all about the making of artificial stones I can recommend the book with the above title, by Ernst Stoffler, engineer, of Zurich, just published by E. & F. N. Spon, Limited, 4s. net. It contains 22 drawings and 5 large plates. The process of binding together particles of stone by means of carbonate of lime exposed to air results in mechanical union only, and the stone blocks require weeks, if not months, before use in building. A stone superior in every way, and to be ready for use in a few hours, is obtained by exposing the mixture to steam at a high temperature, chemical combination taking place between the silica and the lime. The preparations, proportions, and mixing of the raw materials, as well as the conveyance, moulding, and hardening of the stone, are somewhat fully dealt with.

A VALUABLE APPOINTMENT.

Mr. J. Hall Rider, chief consulting and resident engineer for electric tramways and electric lighting under the Plymouth Corporation, has been appointed electrical engineer of the London Council at a salary of £1,000 a year. The appointment is made chiefly in view of the reconstruction of the Council's tramways for electrical traction.

A VACANT ENGINEERSHIP.

The Dundee Harbour Trust require an engineer in succession to Mr. G. C. Buchanan, who has received an appointment in India. The salary is £500 a year.

GERMANY LEARNING OUR OLD LESSONS.

Herr Heuser, in the course of a paper on the waste water of towns, read before a conference of German physicians and others, recapitulated much that is well known to English engineers, etc., remarked that irrigation of cultivated land with it is good but too dear. Mechanical settlement is insufficient alone, and even when added chemically, by lime and ferrous sulphate, gives solutions of doubtful sanitary status and a vast amount of deposit, which have to be disposed of. Its value as a manure is great, but the expenses of transport have to be considered, especially when it is remembered that it has to be carried laden with water. Even after draining on gravel beds the sediment still retains too much water to make it remunerative to transport it to a distance. He thinks that the bacteriological process of water purification will prove to be the solution of the problem, and recommends that it should have an ample trial.

SOUTH WALES IRONWORKS SUFFER FROM AMERICAN COMPETITION.

Some startling facts were revealed as to the present condition of South Wales ironworks by the deputation which waited upon the assessment committee of the Merthyr Board of Guardians on Saturday from the local iron and steel works revealed a condition of affairs which is positively startling. It was declared that the famous Dowlais works are being actually run at a loss. According to the general manager there has not been such a collapse in the trade for forty years. A large part of the Bessemer plant is idle, and several of the Siemens furnaces are out. In despair of the present the works were simply turning out pig-iron and stacking it in the hope of better days. The local tinplate works were actually now being run on imported American steel bars. It was American competition that had practically brought this about. They had to face a new condition of affairs arising from the ability of American competitors by means of cheaper raw materials and the capital they had expended upon machinery to produce articles so much more cheaply than the British manufacturers that, notwithstanding the cost of carriage to this country, the American product was sold at lower rates than the British manufacturer could afford to charge.

ENGLISH AND AMERICAN BRIDGE WORK.

A good deal of fuss was made in Parliament and elsewhere when it became known that the construction of the bridges for the Uganda Railway had been entrusted to an American firm. Now that the reasons for this course being followed are set forth in a Parliamentary paper, no one will be surprised that the order was lost to this country (says the *Daily Telegraph*). The contract was given to the American Bridge Company, U.S.A., who undertook to supply the viaducts at any British port for £10 6s. per ton. The lowest tender made by any English firm was £13 1s. 3d., and this was conditional on delivery being taken in the Mersey. More than this, Yankee makers contracted to have the bridges erected within 46 weeks, while, with the exception of one offer, which was for a smaller quantity than the others, no British firm wanted less than 60 weeks in which to place the material on shipboard. Turning to differences in the terms of tender, it is impossible to compare averages, but the return leaves no doubt as to the greater cheapness and more rapid manipulation of the United States factories.

THE CEMENT TRADE IN 1900.

Throughout the major portion of the year just closed the trade was in far from a prosperous condition. Overproduction was a marked feature of the year, leading to the inevitable consequence of accumulated stocks and cutting competition. This condition has been present in all large centres of production. Home consumption, not increasing in proportion to the larger production, naturally affected selling values, which ruled low during the summer and early autumn—varying from 24s. to 27s. 6d. at the works. Owing to the high cost of fuel the London mills, states Tulloch & Co.'s annual report, were hardly in a position to meet consumers without making a loss. Precisely the same conditions—only perhaps more stringent—apply to manufacturing cost during the current year. Belgian, and, in a lesser degree, German cements competed for British trade, about 110,000 tons having been sold in the United Kingdom. Export prices started with values ranging from 6s. to 6s. 6d., declining to as low as 5s. 9d., but steadying during the autumn to 6s. 3d. and 6s. 4d. Exports from the United Kingdom were 359,982 tons, showing a slight increase on 1899, but not sufficient to keep progress with the large output.

SLAG CONCRETE.

Some years ago I paid a most interesting visit to the collieries and works of the John Cockerill Company at Seraing, Belgium, where, according to the *Engineer and Iron Trades' Advertiser* of Glasgow, concrete has been extensively used for lining circular shafts, drifts, air passages, etc. The concrete used has been made entirely from blast-furnace slag, those from forge iron broken to 30 or 50 millimetres being used as ballast, while the mortar is made of granulated slags, hydraulic lime in the proportion of five to one by volume, and slag cement. These are incorporated in a mortar mill, but no addition of water is necessary, as the granulated slag contains enough. Slag cement is made of about 75 per cent. of granulated grey iron slags, and 25 per cent. of slacked lime. When the slags are tolerably uniform in character, chemical analysis of the materials is not necessary, except when the furnace charges contain magnesia, which should not be present to a greater extent than 3 per cent. The materials required for a cubic metre of concrete are 0·750 cubic metre granulated slag and 0·150 cubic metre hydraulic lime.

A GROWING EVIL.

Electrolysis is responsible for much cable trouble, destroying the covering, exposing the insulation, and thus leading to rapid deterioration. Electrolysis can be guarded against, and, if proper precautions are taken, it can be almost eliminated. Metal pipes, etc., can be entirely protected from this destructive action if moisture is kept from them by some absolutely waterproof medium such as carbonising coating.

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The architects were Messrs. Rolfe & Matthews, of Adelaide Street, Charing Cross, W.C., and the contractors were Messrs. Holloway Brothers. The clerk of works was Mr. John Davis.

MR. BLASHILL, F.R.I.B.A., ON THE STATE OF OUR STREETS.

LONDON streets are not amongst the most cleanly in the world as perhaps most of us know by practical experience. But it was interesting to hear the subject dealt with by so capable an expert as the late County Council architect, Mr. Thos. Blashill, F.R.I.B.A., at the Sanitary Institute on Wednesday evening.

Mr. Blashill said he would not say as some say, as some had said, that London streets were the dirtiest of any to be found in the cities of Europe, but amongst the great Continental towns that he had seen, whether capitals or not, there was nothing similar to them. In all such towns the streets, however they might be paved, were kept clean. The slush in their own streets, however, even in their best thoroughfares except in the City, usually covered the roadway so that it was impossible to cross it without gathering up a material portion to be carried home. Their clothes were fouled and the dust in the street was allowed to blow about in clouds. He gave a few examples of the effectual cleansing of the streets of Continental cities, such as Paris, Vienna, Berlin, Prague, and Brussels. Continuing, he said that 30 years ago the condition of the roadways in London, both as to paving and cleansing, was a matter of serious consideration. He had taken some interest in the matter, and sketched the design from which was made the "street orderly bin" that was now used on nearly all their asphalte roadways and might be seen in the chief Continental cities. In Glasgow they had hundreds of receptacles sunk in the pavement. Sometimes trucks or barrows were used, as in Holland, where the town streets were admirably kept. He was convinced that for town thoroughfares that was the only satisfactory principle. The work of a scavenger should no longer be considered of a low class, or even "unskilled"; it should be well paid and made to attract respectable, able-bodied men. The horse-broom, where needed, should be used with discretion and kept in good order. He offered suggestions as to the material for roadways, and said that "Macadam" was never carried out as the inventor intended. He was reminded by a paragraph in *The Times* of a scheme that had often seemed to him feasible. At Hamilton, in Ontario, they had, after long experiment, adopted a Macadam of limestone saturated with boiling tar. He thought that if granite stones which would pass through an inch and a half ring were mixed dry with boiling pitch, as was done with large gravel, and laid on a firm bed, then sprinkled with dry chippings and lightly rolled, a good hard roadway would be obtained. He expressed a strong and unhesitating opinion that the dirt in their streets, apart from odious comparisons, had increased, was increasing, and ought to be diminished.

With which opinion we are sure we are all in cordial agreement.

SOME ARCHITECTURE IN CRETE AND TURKEY.*

BY D. T. FYFE.

I.—CRETE.

LIKE all Greeks lands, Crete belongs to the dawn of history, and is rich in remains of that Mycenean civilisation, about which so little is known. This period, however, belongs more to the domain of archæology than of architecture, as also, in the case of Crete, do the Greek and Roman periods; their remains being so scanty as to afford little architectural interest. After the decline of the Roman period the island was conquered by the Saracens in A.D. 820; then by the Byzantines in 961; but to Venice belongs the chief mediæval period, which lasted from 1204 till the final conquest by the Turks in 1669. The island in its most representative aspects is Venetian. Under the Turks how rebellion followed rebellion is matter of well-known history.

It is certain that Crete held an important place in the Early Egean civilisation. Homer mentions it as a land of ninety cities, from which we can infer that it was highly populated. The sites of many of the Homeric cities have been identified, and are now partially disclosed, notably, Knossos, Gortyna, and Ghoulas. In their construction we notice the same characteristics which are displayed in the Palaces of Tiryns and Mycenæ, in the mainland of Greece, excavated by Schliemann and Dr. Dörpfeld, etc. In all are the same mud (or rubble and mud) walls, mysteriously appearing to be contemporary with Cyclopean masonry: the same circular stone columbases and paved areas. Only Knossos has produced some entirely new forms of architectural plan and detail, and such a collection of painted stucco, both existing on the walls and in fragments, as to make it quite unique in the Levant. Looking at this stucco as a means of decoration, it is noticeable that two distinct scales seem to have been employed. One comparatively easy to appreciate now, consisting of life-size representations of figures, bulls, gryphons, etc., or conventional representations of landscape. The other consisting of very small objects or figures produced in a more brilliant style, and found in

*A paper read before the Architectural Association on the 8th inst.

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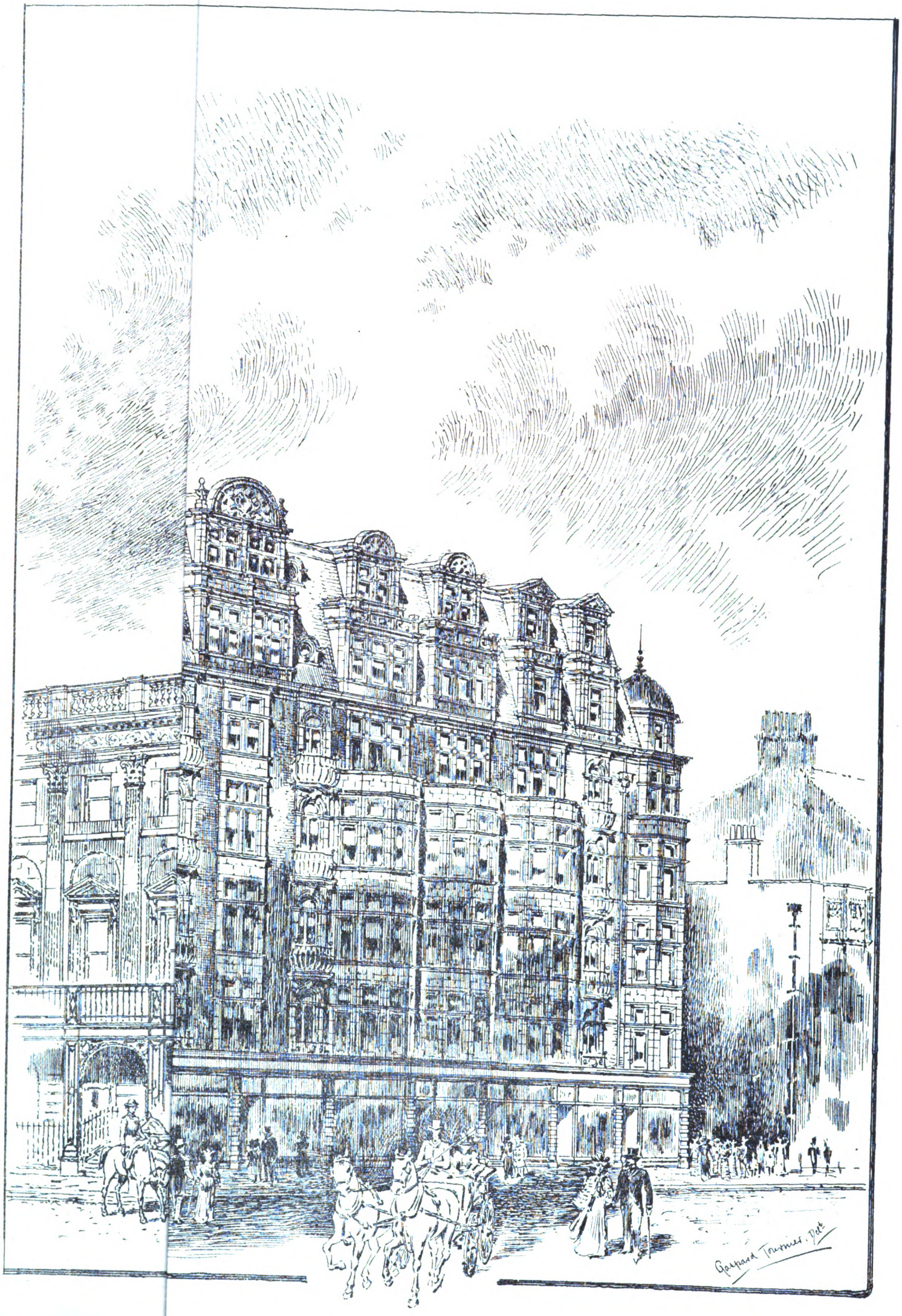

CLEVELAND HOUSE, S. JAME'S SQUARE
ROLFE AND MATTHEWS, ARCHITECTS

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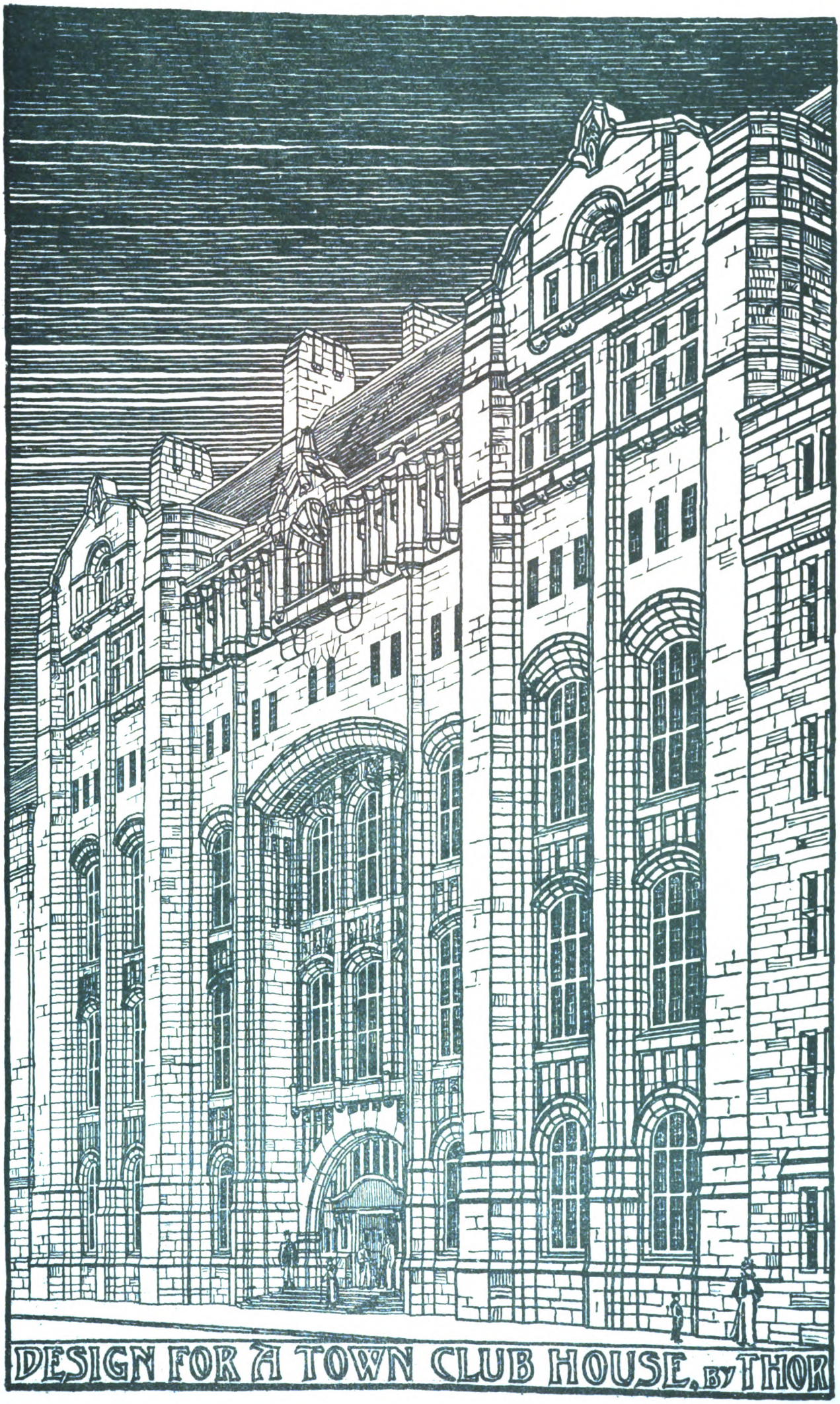

DESIGN FOR A TOWN CLUB HOUSE, BY THOR

R.I.B.A. SOANE MEDALLION.
DESIGN BY A.E. CORBETT.

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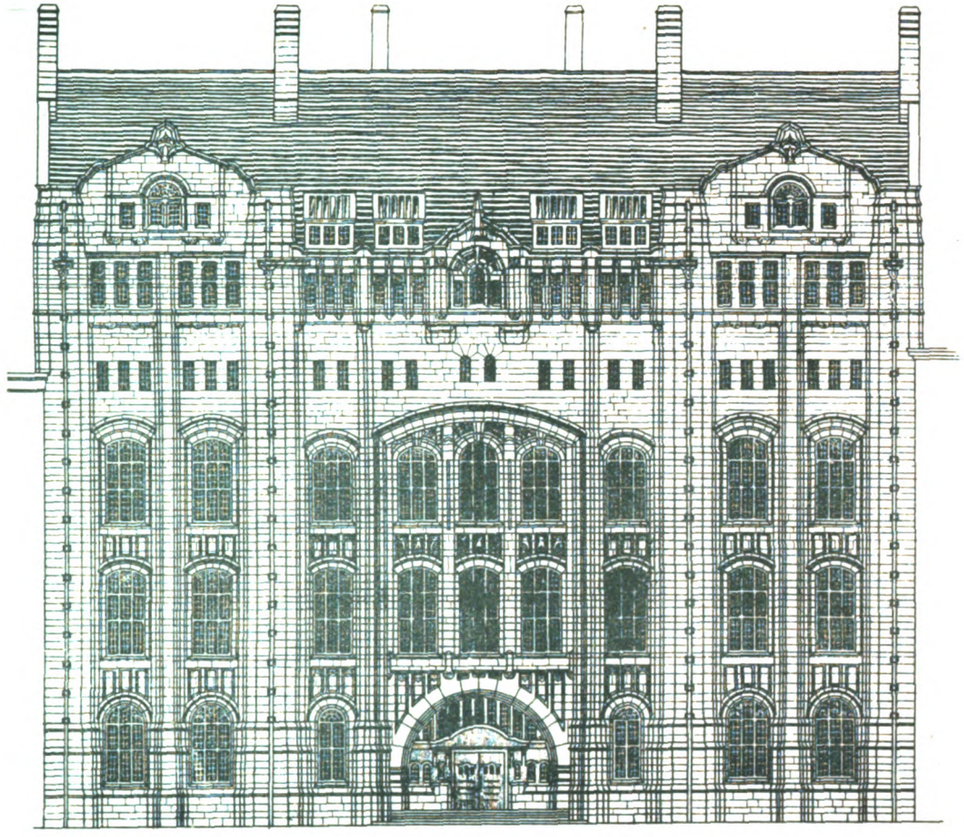
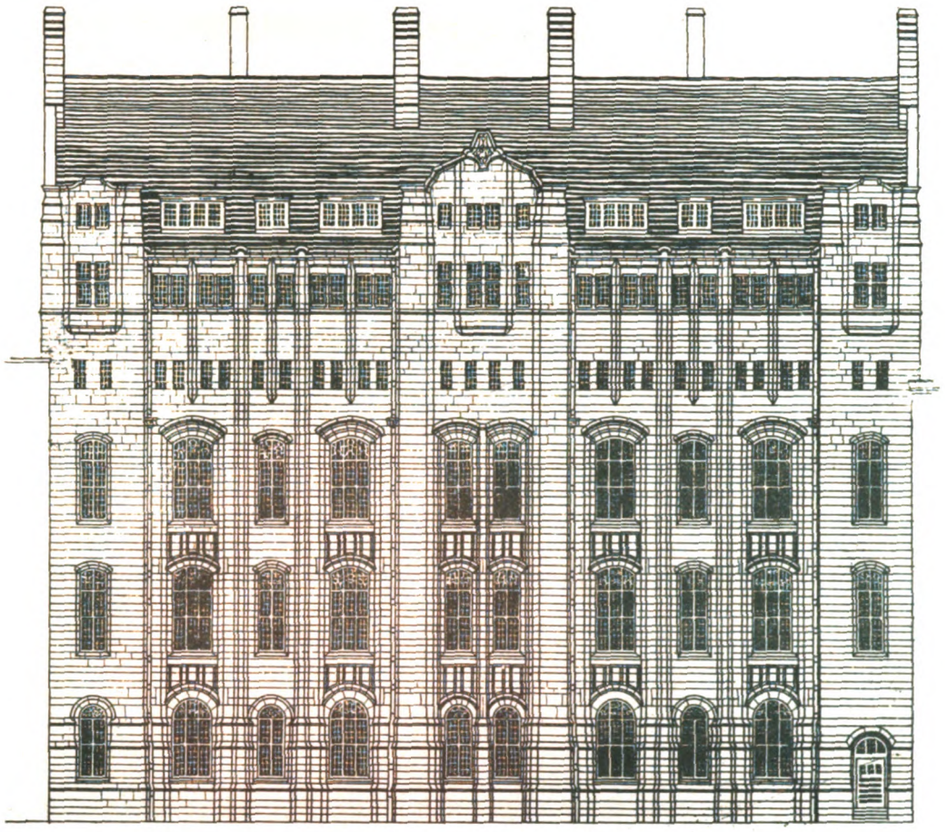


FRONT ELEVATION



BACK ELEVATION

SCALE 8 FEET = 1 INCH

10 5 0 10 20 30 40 50 60 70 80 90

R.I.B.A. SOANE MEDALLION
DESIGN BY A. E. CORBETT.

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such small fragments as to make it hard to understand how it could have been used. From this latter variety some very interesting architectural representations are apparent, which help to elucidate the subject of Mycenean building. The art displayed at Knossos is the complete fruition of the genius of the time. Though some of the finds at Vaphio, in Greece, are quite as artistically mature, a comparison of Knossos with either Vaphio or Mycenæ is futile at present, as so much of the treasure of the latter comes from the tombs, which in the Cretan site have not as yet been discovered. But in the palace itself enough has already been found to show that in this reputed home of the art of Dedalus, a very keen, strong perception of natural forms existed, and a direct getting at nature behind an indefinable veil of conventionality, which gives the art of this epoch a distinct value of its own. In building, the outer walls, which may have been more or less fortifications, are based on ponderous squared blocks of gypsum, which weathers with water grooves, like the hard calcareous substance of a cave. The bases of many walls in limestone and gypsum have been found very accurately levelled and laid out, but it still remains a problem in many cases whether the superstructure was of the same substantial material or of mud to take stucco work. Nothing of direct evidence has been found to point to the existence of later Greek or Roman settlements over this primitive one of the palace at Knossos, though many Roman fragments exist in the vicinity. The site of Ghoulas is an Acropolis much more approaching the wild and inaccessible character of Mycenæ than the refined and civilised Knossos. Splendid polygonal masonry exists here, forming ramparts up a steep hillside which overlooks a truly Greek prospect of hill and plain. And here also are picturesque evidences of a later Roman settlement on the Acropolis itself. But Crete has no prominent Roman architectural remains above ground that would bear comparison with those of Italy, Greece, and Asia Minor, and be of much help to the student in his search for the historic links which bind the Imperial Art to the Romanesque and Renaissance of later times.

Coming to more modern times we notice also that Crete has passed through so many vicissitudes, and fire and sword have wrought in it such havoc, that its present day can show but little of permanent architectural value above ground. Whatever it was in early times, both under the Venetians and the Turks, it formed but an outpost station, very liable to attack; so it is not surprising if the engineering of walls, and the useful side of architecture generally, form a large part of what is to be seen in the island today. Owing to the fusion of periods of the dominant mediæval power, and the later, conquering Islam, Candia, the most important historical town and the capital of the island, presents in its picturesque aspect an Eastern town with white walls and minarets, combined with massive sea-walls and fortifications. One can sail close in round the harbour in a small boat, and see as sign the lion of St. Mark high up in frowning walls, and afterwards, on landing and traversing the market, be bewildered by all the strangeness of an Eastern town. This is true, of course, all over the Levant. The conquering Turk was an interloper and a barbarian, who settled down amidst the cultured evidences of mediæval times; and so from Constantinople, downwards in the scale, one finds the same thing—the dome, minaret, and whitewash of the Turk side by side with the grey stonework of the conquered Christian races.

The more modern architectural remains of Crete include: — 1. Churches and monasteries in a pseudo-Byzantine style, similar to those met with in the country districts of Greece. 2. Buildings of the early Venetian period, in which the pointed arch was employed. 3. Later Venetian buildings in a provincial Renaissance style. 4. Turkish buildings, which are mainly domestic, and in plain stucco. The town of Candia contains examples of all of these, except the first, though it has also been sadly deprived of much that was apparently interesting of the Venetian period. I shall give some description of Candia, and then indicate what I saw of other work. The great defence of Crete against the Turks in the seventeenth century was a matter of such interest to the Christian Powers of Europe, that we fortunately possess some literature on the subject, and contemporary plans of the fortifications of Candia, the siege of which lasted for more than two years, and became one of the most memorable in history. I have here a plan of that time made by a French Admiral, the Marquis de Ville, who commanded a relief expedition. This plan will serve to show to the curious the nature and extent of the original fortifications. Many of these, especially on the north side, exist to the present day in a good state of preservation; and some of the photographs I have will indicate their character. It will be seen from the plans that the nature of the harbour has been taken advantage of much in the same way as at Rhodes; and the fortifications of the two towns resemble one another, both being more irregular than those of Nicosia in Cyprus, a plan of which was published in the *Builder* recently. The Candia walls are good examples of their class, but they have no prominent towers and no decorative details of interest, except the occasional panels with the Lion of St. Mark before alluded to, and a few small carved coats of arms. So they are probably inferior in general interest to those at Famagusta, in Cyprus, and those at Rhodes. There are three principal gates in existence, all Renaissance of the Venetian period: the Canea Gate, the *Kainourio*, or "New" Gate, and the Lazaretto Gate. This last is probably the most interesting of the three, and has a long vaulted passage from the ornamental inner gate to the outer entrance. This passage is barrel-vaulted in rubble and descends pretty rapidly towards the outside. It turns sharply to the left at the end, so that there is an intersection, over which is a dome lit with a single eye; thus when the outer gate was shut the passage would not be in darkness. The form of the inner gate, with its pediment, is quaint; but the details are coarse and in no way improved by much whitewashing. The part of the wall at this gate was, perhaps, the most impregnable, as it commanded a very deep moat, owing to the rapid slope of the ground towards the sea. The level square of the town inside the gate is raised artificially, and a few steps ascend to a platform which juts out beyond the main line of the wall, being built upon a forework which originally protected the bastion here. The raised plateau is now the Public Garden, and commands a fine, though limited, view seawards and a good sight of the walls. To return to the other gates. The *Kaincurio* is more commonplace than the Lazaretto, but is of naked stone, and has a good quiet cornice. It forms the entrance to the town from the interior of the island, and the present roadway really crosses what was the moat of mediæval times. It has also a long vaulted passage from inner to outer gate, though not so remarkable as the other.

The Canea Gate has even less of architectural interest than the other two, and I do not possess any illustration of it. It has no vaulted passage, being merely in the thickness of the wall, and it leads to the high road that runs eastwards along the north shore of the island, towards Retimo and Canea.

Leaving the walls and gates now, and entering the town by the harbour, we see first the remains of the great arches of Venetian Gothic which formed the arsenals of the mediæval town. They are marked thus on the old plan, and were, no doubt, complete before the great siege. Now, in their ruined state, they are used as boat slips. The responds which exist on the back wall show that there must have been ribbed and groined vaults here, and the piers that exist are massive enough to show the large scale of the whole. Leaving the harbour, we pass up a sloping street to the centre of interest—the market square—at the highest part of the town. Streets radiate in all directions, but the interest here is diffused, and the square is only a quiet aside. The throng of the markets is at another meeting of streets a few yards from it, surrounded by low, squalid buildings, with here and there a crazy, whitewashed dome. The market square, however, has a fine old Venetian fountain in the centre, surrounded by a Turkish marble and wrought-iron grille; and from this point can be seen, partly hidden by a large plane tree, the only large building in the town of any character—the old Venetian Renaissance armoury, now proposed to be renovated and used as a museum of antiquities. This building is a very good example of its period, and exhibits, as do other little things in Candia, many of those quaint provincialisms which so often delight the careful eye in architectural by-paths. The proportions

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MR. BLASHILL, F.R.I.B.A., ON THE STATE OF OUR STREETS.

LONDON streets are not amongst the most cleanly in the world as perhaps most of us know by practical experience. But it was interesting to hear the subject dealt with by so capable an expert as the late County Council architect, Mr. Thos. Blashill, F.R.I.B.A., at the Sanitary Institute on Wednesday evening.

Mr. Blashill said he would not say as some say, as some had said, that London streets were the dirtiest of any to be found in the cities of Europe, but amongst the great Continental towns that he had seen, whether capitals or not, there was nothing similar to them. In all such towns the streets, however they might be paved, were kept clean. The slush in their own streets, however, even in their best thoroughfares except in the City, usually covered the roadway so that it was impossible to cross it without gathering up a material portion to be carried home. Their clothes were fouled and the dust in the street was allowed to blow about in clouds. He gave a few examples of the effectual cleansing of the streets of Continental cities, such as Paris, Vienna, Berlin, Prague, and Brussels. Continuing, he said that 30 years ago the condition of the roadways in London, both as to paving and cleansing, was a matter of serious consideration. He had taken some interest in the matter, and sketched the design from which was made the "street orderly bin" that was now used on nearly all their asphalte roadways and might be seen in the chief Continental cities. In Glasgow they had hundreds of receptacles sunk in the pavement. Sometimes trucks or barrows were used, as in Holland, where the town streets were admirably kept. He was convinced that for town thoroughfares that was the only satisfactory principle. The work of a scavenger should no longer be considered of a low class, or even "unskilled"; it should be well paid and made to attract respectable, able-bodied men. The horse-broom, where needed, should be used with discretion and kept in good order. He offered suggestions as to the material for roadways, and said that "Macadam" was never carried out as the inventor intended. He was reminded by a paragraph in *The Times* of a scheme that had often seemed to him feasible. At Hamilton, in Ontario, they had, after long experiment, adopted a Macadam of limestone saturated with boiling tar. He thought that if granite stones which would pass through an inch and a half ring were mixed dry with boiling pitch, as was done with large gravel, and laid on a firm bed, then sprinkled with dry chippings and lightly rolled, a good hard roadway would be obtained. He expressed a strong and unhesitating opinion that the dirt in their streets, apart from odious comparisons, had increased, was increasing, and ought to be diminished.

With which opinion we are sure we are all in cordial agreement.

SOME ARCHITECTURE IN CRETE AND TURKEY.*

BY D. T. FYFE.

I.—CRETE.

LIKE all Greeks lands, Crete belongs to the dawn of history, and is rich in remains of that Mycenean civilisation, about which so little is known. This period, however, belongs more to the domain of archæology than of architecture, as also, in the case of Crete, do the Greek and Roman periods; their remains being so scanty as to afford little architectural interest. After the decline of the Roman period the island was conquered by the Saracens in A.D. 820; then by the Byzantines in 961; but to Venice belongs the chief mediæval period, which lasted from 1204 till the final conquest by the Turks in 1669. The island in its most representative aspects is Venetian. Under the Turks how rebellion followed rebellion is matter of well-known history.

It is certain that Crete held an important place in the Early Egean civilisation. Homer mentions it as a land of ninety cities, from which we can infer that it was highly populated. The sites of many of the Homeric cities have been identified, and are now partially disclosed, notably, Knossos, Gortyna, and Ghoulas. In their construction we notice the same characteristics which are displayed in the Palaces of Tiryns and Mycenæ, in the mainland of Greece, excavated by Schliemann and Dr. Dörpfeld, etc. In all are the same mud (or rubble and mud) walls, mysteriously appearing to be contemporary with Cyclopean masonry: the same circular stone columbases and paved areas. Only Knossos has produced some entirely new forms of architectural plan and detail, and such a collection of painted stucco, both existing on the walls and in fragments, as to make it quite unique in the Levant. Looking at this stucco as a means of decoration, it is noticeable that two distinct scales seem to have been employed. One comparatively easy to appreciate now, consisting of life-size representations of figures, bulls, gryphons, etc., or conventional representations of landscape. The other consisting of very small objects or figures produced in a more brilliant style, and found in

*A paper read before the Architectural Association on the 8th inst.

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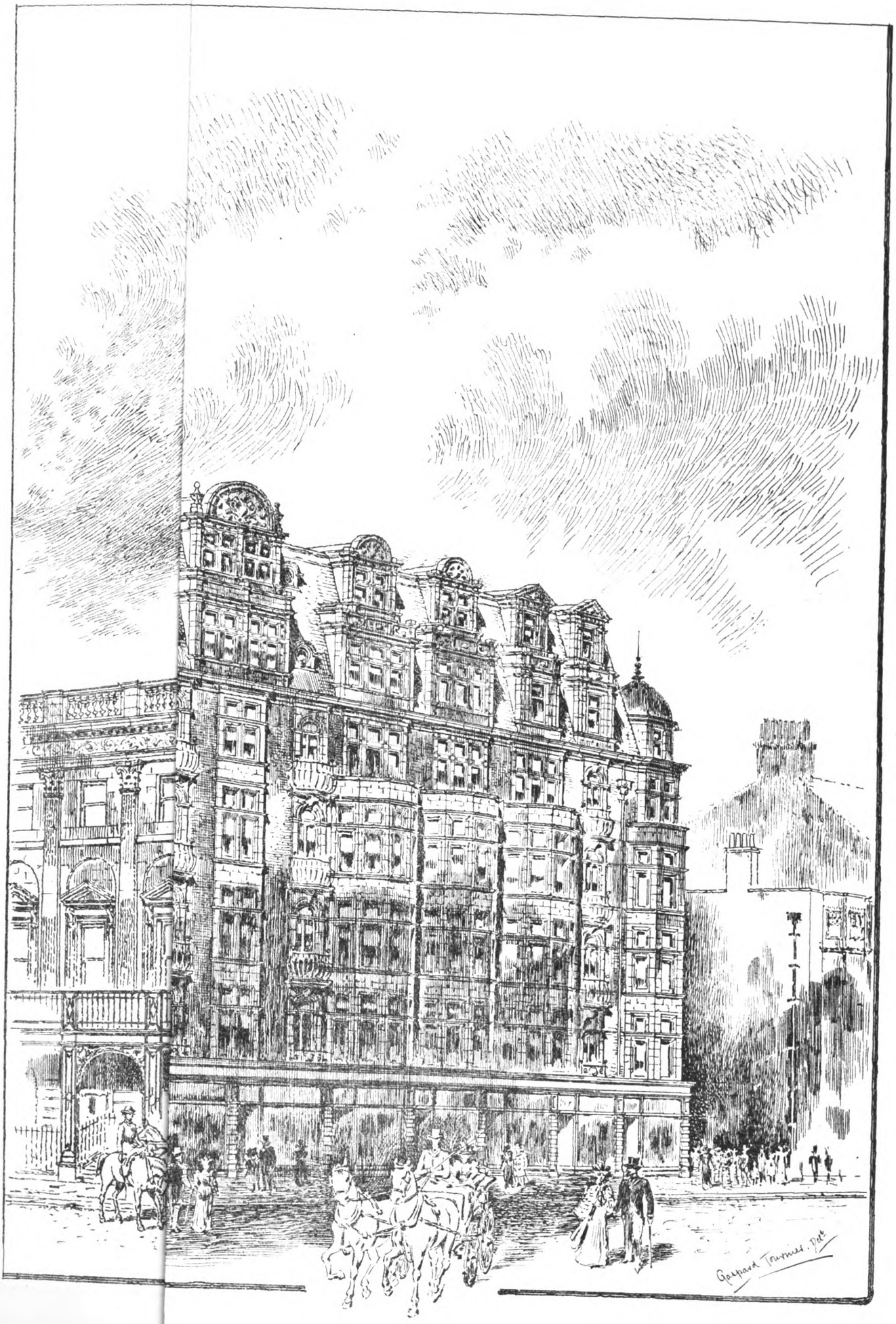

CLEVELAND HOUSE, S. JAMES'S SQUARE
ROLFE AND MATTHEWS, ARCHITECTS

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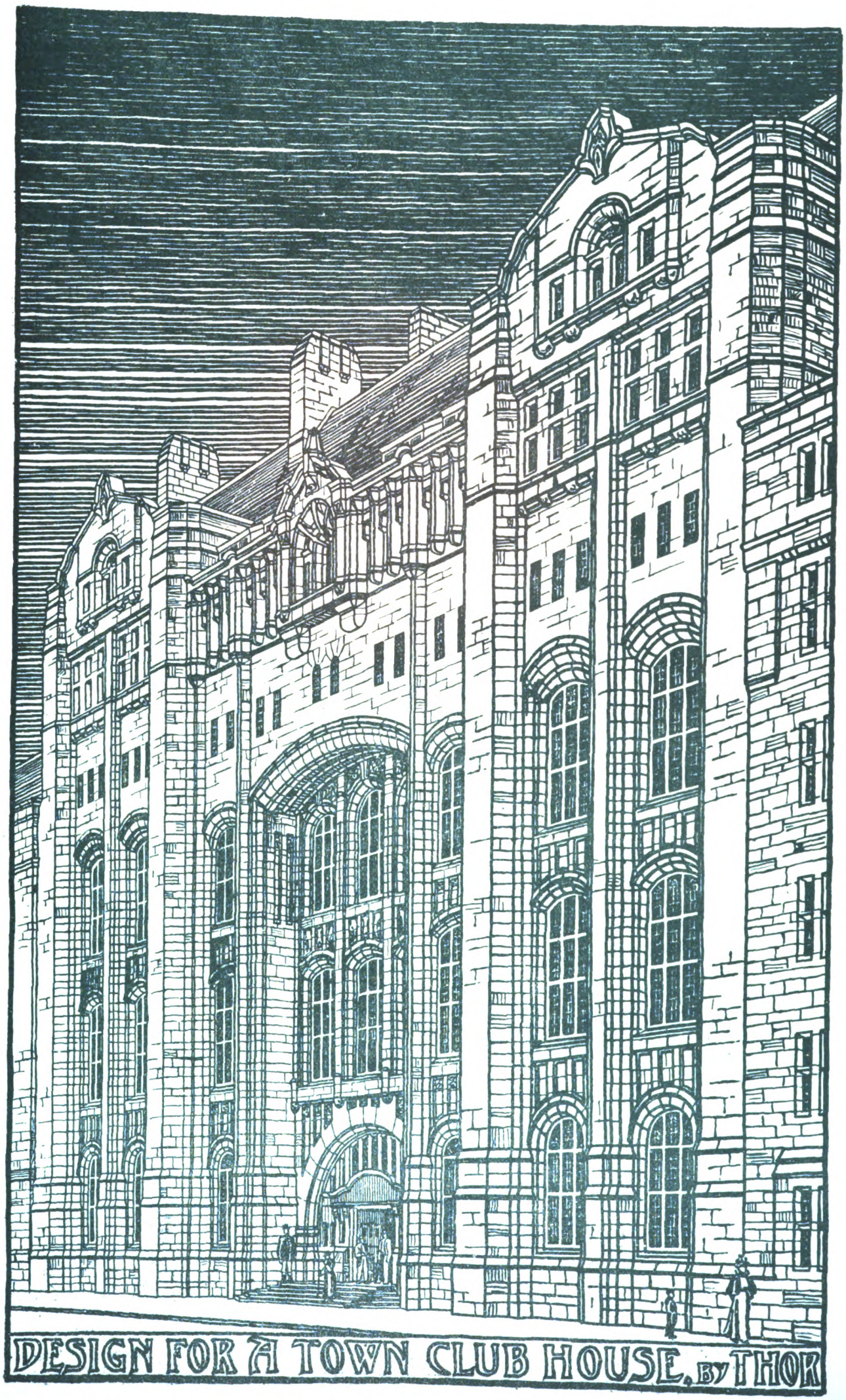

DESIGN FOR A TOWN CLUB HOUSE. BY THOR

R.I.B.A. SOANE MEDALLION.
DESIGN BY A. E. CORBETT.

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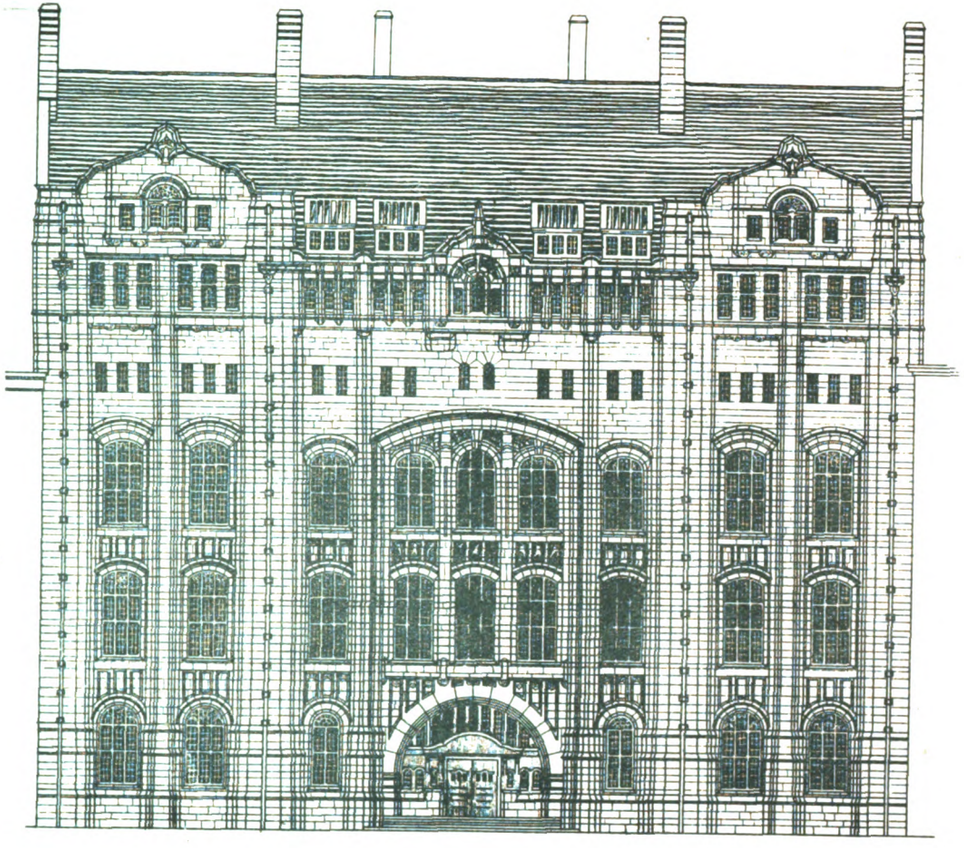
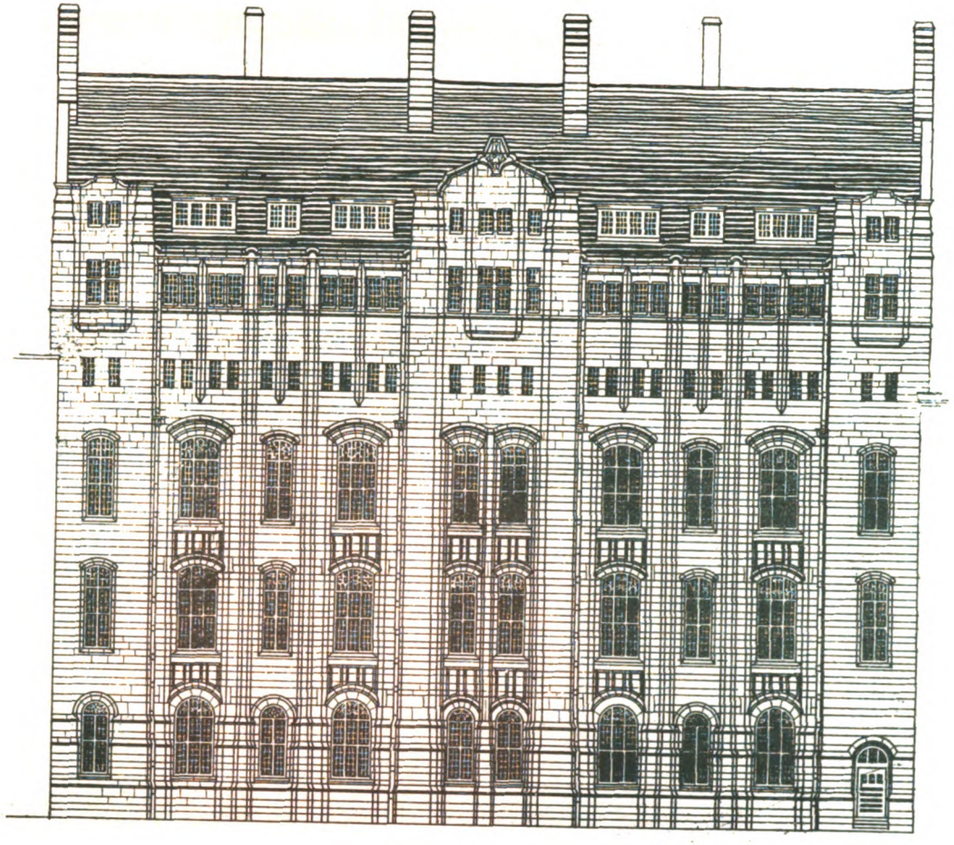


FRONT ELEVATION



BACK ELEVATION

SCALE 8 FEET = 1 INCH

10 5 0 10 20 30 40 50 60 70 80 90

R.I.B.A. SOANE MEDALLION
DESIGN BY A.E. CORBETT

THE BRITISH ARCHITECT, FEBRUARY 15TH 1901 COPYRIGHT.

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such small fragments as to make it hard to understand how it could have been used. From this latter variety some very interesting architectural representations are apparent, which help to elucidate the subject of Mycenean building. The art displayed at Knossos is the complete fruition of the genius of the time. Though some of the finds at Vaphio, in Greece, are quite as artistically mature, a comparison of Knossos with either Vaphio or Mycenæ is futile at present, as so much of the treasure of the latter comes from the tombs, which in the Cretan site have not as yet been discovered. But in the palace itself enough has already been found to show that in this reputed home of the art of Dedalus, a very keen, strong perception of natural forms existed, and a direct getting at nature behind an indefinable veil of conventionality, which gives the art of this epoch a distinct value of its own. In building, the outer walls, which may have been more or less fortifications, are based on ponderous squared blocks of gypsum, which weathers with water grooves, like the hard calcareous substance of a cave. The bases of many walls in limestone and gypsum have been found very accurately levelled and laid out, but it still remains a problem in many cases whether the superstructure was of the same substantial material or of mud to take stucco work. Nothing of direct evidence has been found to point to the existence of later Greek or Roman settlements over this primitive one of the palace at Knossos, though many Roman fragments exist in the vicinity. The site of Ghoulas is an Acropolis much more approaching the wild and inaccessible character of Mycenæ than the refined and civilised Knossos. Splendid polygonal masonry exists here, forming ramparts up a steep hillside which overlooks a truly Greek prospect of hill and plain. And here also are picturesque evidences of a later Roman settlement on the Acropolis itself. But Crete has no prominent Roman architectural remains above ground that would bear comparison with those of Italy, Greece, and Asia Minor, and be of much help to the student in his search for the historic links which bind the Imperial Art to the Romanesque and Renaissance of later times.

Coming to more modern times we notice also that Crete has passed through so many vicissitudes, and fire and sword have wrought in it such havoc, that its present day can show but little of permanent architectural value above ground. Whatever it was in early times, both under the Venetians and the Turks, it formed but an outpost station, very liable to attack; so it is not surprising if the engineering of walls, and the useful side of architecture generally, form a large part of what is to be seen in the island today. Owing to the fusion of periods of the dominant mediæval power, and the later, conquering Islam, Candia, the most important historical town and the capital of the island, presents in its picturesque aspect an Eastern town with white walls and minarets, combined with massive sea-walls and fortifications. One can sail close in round the harbour in a small boat, and see as sign the lion of St. Mark high up in frowning walls, and afterwards, on landing and traversing the market, be bewildered by all the strangeness of an Eastern town. This is true, of course, all over the Levant. The conquering Turk was an interloper and a barbarian, who settled down amidst the cultured evidences of mediæval times; and so from Constantinople, downwards in the scale, one finds the same thing—the dome, minaret, and whitewash of the Turk side by side with the grey stonework of the conquered Christian races.

The more modern architectural remains of Crete include: — 1. Churches and monasteries in a pseudo-Byzantine style, similar to those met with in the country districts of Greece. 2. Buildings of the early Venetian period, in which the pointed arch was employed. 3. Later Venetian buildings in a provincial Renaissance style. 4. Turkish buildings, which are mainly domestic, and in plain stucco. The town of Candia contains examples of all of these, except the first, though it has also been sadly deprived of much that was apparently interesting of the Venetian period. I shall give some description of Candia, and then indicate what I saw of other work. The great defence of Crete against the Turks in the seventeenth century was a matter of such interest to the Christian Powers of Europe, that we fortunately possess some literature on the subject, and contemporary plans of the fortifications of Candia, the siege of which lasted for more than two years, and became one of the most memorable in history. I have here a plan of that time made by a French Admiral, the Marquis de Ville, who commanded a relief expedition. This plan will serve to show to the curious the nature and extent of the original fortifications. Many of these, especially on the north side, exist to the present day in a good state of preservation; and some of the photographs I have will indicate their character. It will be seen from the plans that the nature of the harbour has been taken advantage of much in the same way as at Rhodes; and the fortifications of the two towns resemble one another, both being more irregular than those of Nicosia in Cyprus, a plan of which was published in the *Builder* recently. The Candia walls are good examples of their class, but they have no prominent towers and no decorative details of interest, except the occasional panels with the Lion of St. Mark before alluded to, and a few small carved coats of arms. So they are probably inferior in general interest to those at Famagusta, in Cyprus, and those at Rhodes. There are three principal gates in existence, all Renaissance of the Venetian period: the Canea Gate, the *Kainourio*, or "New" Gate, and the Lazaretto Gate. This last is probably the most interesting of the three, and has a long vaulted passage from the ornamental inner gate to the outer entrance. This passage is barrel-vaulted in rubble and descends pretty rapidly towards the outside. It turns sharply to the left at the end, so that there is an intersection, over which is a dome lit with a single eye; thus when the outer gate was shut the passage would not be in darkness. The form of the inner gate, with its pediment, is quaint; but the details are coarse and in no way improved by much whitewashing. The part of the wall at this gate was, perhaps, the most impregnable, as it commanded a very deep moat, owing to the rapid slope of the ground towards the sea. The level square of the town inside the gate is raised artificially, and a few steps ascend to a platform which juts out beyond the main line of the wall, being built upon a forework which originally protected the bastion here. The raised plateau is now the Public Garden, and commands a fine, though limited, view seawards and a good sight of the walls. To return to the other gates. The *Kaincurio* is more commonplace than the Lazaretto, but is of naked stone, and has a good quiet cornice. It forms the entrance to the town from the interior of the island, and the present roadway really crosses what was the moat of mediæval times. It has also a long vaulted passage from inner to outer gate, though not so remarkable as the other.

The Canea Gate has even less of architectural interest than the other two, and I do not possess any illustration of it. It has no vaulted passage, being merely in the thickness of the wall, and it leads to the high road that runs eastwards along the north shore of the island, towards Retimo and Canea.

Leaving the walls and gates now, and entering the town by the harbour, we see first the remains of the great arches of Venetian Gothic which formed the arsenals of the mediæval town. They are marked thus on the old plan, and were, no doubt, complete before the great siege. Now, in their ruined state, they are used as boat slips. The responds which exist on the back wall show that there must have been ribbed and groined vaults here, and the piers that exist are massive enough to show the large scale of the whole. Leaving the harbour, we pass up a sloping street to the centre of interest—the market square—at the highest part of the town. Streets radiate in all directions, but the interest here is diffused, and the square is only a quiet aside. The throng of the markets is at another meeting of streets a few yards from it, surrounded by low, squalid buildings, with here and there a crazy, whitewashed dome. The market square, however, has a fine old Venetian fountain in the centre, surrounded by a Turkish marble and wrought-iron grille; and from this point can be seen, partly hidden by a large plane tree, the only large building in the town of any character—the old Venetian Renaissance armoury, now proposed to be renovated and used as a museum of antiquities. This building is a very good example of its period, and exhibits, as do other little things in Candia, many of those quaint provincialisms which so often delight the careful eye in architectural by-paths. The proportions

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and details are alike good, and admirably in scale with the general air of the town. A crowning balustrade is rather wanting somehow, though its addition might take away from the Venetian character of the building. White stone is the material used, but the lower story has been white-washed—a favourite trick of the Turk everywhere. The smallness of the rustication is noticeable. At the rear of the building, otherwise plainer than the front, are some quaint metopes in the Doric frieze, representations of weapons, etc., carved with great boldness. The other Renaissance work in the town is fragmentary, but the Turks largely adopted details of the late Venetian occupation, which causes some confusion. The Gothic work in the town, or rather the "pointed arch" work is in some cases even more difficult to analyse, as the Turks are always at home with the pointed arch, so that the Venetian Gothic and the Turkish work are not always readily distinguishable. Both of them have probably a Saracenic origin. Venetian Gothic is certainly quite a unique flower in architecture, and perhaps belongs properly to the East, as the Turkish work undeniably does. There are one or two charming fragments of Venetian Gothic in the town, enough to show what might have been under a more fortunate dispensation. The doorway is a good example The capitals at the impost show Byzantine and Classic influence, and are beautifully detailed. The sturdy stone fountains of lions in the market square are quite a treasure, with large and generous treatment of basins and mouldings. The Turkish grille surrounding it, though it rather hides the older and better work, gives it additional dignity. The form of the grille is probably governed by the old carved marble panels of Roman or Byzantine time which are built in at the base. In the new upper part a light grey marble is used for the framework, sparingly decorated with gilding and green paint. Here should be mentioned the only Gothic church in the town which is still standing. It is now used as a mosque, but is evidently the building marked as St. Saviour's in De Ville's plan. It has no pretensions whatever, being merely a barn-like structure, with high, narrow, pointed windows, all perfectly plain. It has a stumpy Turkish minaret of a pleasantly original design. This mosque is illustrated in Pashley's "Travels in Crete." I have, unfortunately, no illustration of the wall fountain in the little square beside this mosque, which is the only example I know in Candia of Roman work being built into a wall by later hands, and which is so commonly seen and often so charmingly effective in Rome and Constantinople. The Candia fountain has merely a quaintness caused by broken-nosed statues and battered columns, associated with some common-sense mouldings. Of Turkish work one of the best old fragments is the series of arches in the main street leading up from the harbour. It much resembles the boat-slips at the harbour, but has one or two tricks of Turkish detail. The Turkish fountains are mostly at the corners of the streets, and, generally speaking, are hardly worth taking note of; but in one or two cases the simplicity of the mouldings deserves attention. Turkish work, when it redoubles on itself without other influences, has a tendency to over-elaboration, and most of the great show fountains of Constantinople are glorified grottoes in their total effect; so that it is refreshing to come across some things in this little provincial town which, either from poverty of workmanship or uncertainty of style, are simpler and broader in treatment. The little corner kiosk illustrates the better class of Turkish bijou in Candia, and though it is small, has some claims, if one can get behind the oceans of abuse and whitewash. The centre spot in the lower panels is a favourite form, and is met with all over Turkish work. In the narrow winding streets one sees Turkish wooden houses with latticed windows, usually with a good projecting cornice and pilasters, and the upper storey projected two or three feet, and supported on wood brackets. In the high walls giving access to the forecourts of the stone houses one sees here and there a Renaissance door and window, with occasionally a wall fountain, a trough surmounted by a round-arched niche and accessories being the usual motive. None of these call for any particular remark. The wood houses are pretty much the same as those in the streets of Stamboul, and remind one a little of English half-timbered work, gables of course being absent, and a thin, match-boardy effect taking the place of the solid oak of the English. I have reserved the mention of the earliest work of all, the Byzantine, till the last; but there is really no definite building in that style that I am aware of existing in Candia. Pashley mentions nothing in his book, and the only thing which Spratt mentions which I have not identified is (I quote his own words) "the ruined church of St. Titus, over the eastern part of the fortifications, for such a town, of cathedral proportions and architecture. A handsome entrance and circular window over, and part of an elegant baptistry attached to it, are still standing." It may have been an overlook on my part, but I certainly know nothing of such a church, which may, of course, have been destroyed since Spratt's time (1865). The church also may not have been Byzantine. This takes us pretty well over the ground for Candia. In general impression it is a hopeless mixture of the odds and ends of various periods. There is not a recent building of any note whatever, except perhaps the Greek cathedral, and not a single mosque which is worth enlarging on. The best mosque in the town is the plain old building mentioned before as the only Gothic church existing; but here, beyond a picturesque weather-beaten, brick-and-stucco wall, there is nothing to be noted. The modern Greek cathedral (shown in the sketch in combination with the minaret of the new mosque) is best seen at a distance, and gives additional life to the sea-view of the town. One can pretty well take in the town after a walk through, and appreciate what it is—tawdry, neglected, mediæval Eastern—shortly to become more important, perhaps, through a museum which consists of valuable exhibits with no proper building to hold them; which is part of the fact that many people have ideas about reform in Crete; but as yet very little money or unanimity of opinion have been forthcoming to carry them out.

But, leaving Candia and the burden of Crete meanwhile, let us turn our attention to other parts of the island, and see what is to be found in the way of architecture. And if the result is disappointing, we can remember that archæologically, at least, the ancient evidences are of immense value. The results of Knossos, Praesos, Gortyna, Ghoulas, etc., and the sundry caves of Zeus are giving Crete a research interest quite exceeding expectations. Architecturally, however, it has no town with a strong mediæval interest, like Rhodes, and no body of work such as is disclosed to us in M. Enlart's new book on Cyprus. The results for Crete are in comparison meagre and fragmentary; here and there a small Byzantine church or a picturesque monastery, and for the rest, merely the plain domestic work met with in the country districts of any Eastern land. It is true that there are two other towns of importance on the north coast—Canea and Retimo—Canea being really the modern capital of the island; and I have not examined these towns as I have Candia, but anything really important would naturally be found at the latter place. The growth of Canea is due to the adjacent harbour of Suda, by far the best in Crete, and its prestige is only on the modern side. It is the residential town of the High Commissioner, and, like Retimo, a commercial centre. It would be necessary, therefore, to thoroughly explore the country districts to arrive at a complete knowledge of all the smaller Cretan work. As the architectural bits are so fragmentary, and native evidence so little to be depended on, this would mean a tour of several months' duration. The Italians are said to be working up the architecture of Crete now, but I am not certain how thoroughly for the country districts. I was only able to make a tour of about 100 miles through fairly representative country, but was thus able to appreciate pretty well what can be looked for from the island. I could not do better, I daresay, than illustrate by examples the Cretan house, church, and monastery.

The houses of the Turkish beys are the only ones left to us of any importance. They are usually farm-steadings in themselves, but the houses of retainers are sometimes grouped in a tiny village near. I can briefly illustrate the better class of house by the one I have most acquaintance with—the headquarters of the excavation at Knossos—of which I have sketch and plan. The front entrance is quite a private one, and leads to the little piazza reserved for the household. The real entrance is at the back, through a courtyard, and leading out of this yard, round which are grouped the stables, is a smaller one descending

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to the kitchen apartments and entrance to the harem. The *selamlik* looks out to the front, as do the other principal rooms. All have stone wall fountains, which cool the air in summer, and a divan, or at least a platform, round three sides. Glass is a luxury, but hinged wood shutters opening outwards are indispensable. In the house I am describing there are loopholes in the walls, presumably for defence. Joined on to the house, besides the little piazza in front, is a large water tank, forming a reservoir for the irrigation of the garden. This tank is not conducive to health in summer time. The house is all whitewashed externally, and is very sensibly plain, with a square parapet to the flat mud, or cement, roof. The rain water is carried off by channels running down the wall, which in the front of the house are screened by pilasters. The ceilings are of wood; stout exposed rafters carrying boarding. In the back entrance lobby is an olive press in the wall for the use of the household. As for the villages, the small out-of-the-way ones have the merest shanties, with rough stone whitewashed walls and flat mud roofs, huddled together in picturesque style. The hill villages in summer are pleasant, as one-half lives on the roof. The larger villages have whitewashed houses, the more important ones with courtyards opening off the streets, and sometimes of two storeys, as in Candia. Red tiled gabled roofs are also occasionally met with, though they are really modern features.

The next thing to consider is the Byzantine church. This is often in splendid isolation, sometimes on a hill-top, and occasionally even on mountain summits. But every village has its εκκλησια; at feasts, such as Easter, a very important place indeed. The universal plan is an oblong hall, without a narthex, and with but one feature —the tiny apsidal projection at the east end, finishing semi-dome fashion. In this apse is the only fancy window; in common cases, usually a queer little two-light, with the luxury of a hood-mould. The better class of church has a carved door, or painting in the plastered vault. Notes from the two churches beside the ancient site of Lyttos will illustrate. The rough plan and section of the church of St. George illustrates an average arrangement. There are traces of rude painting in the vault of this church. A very common type of door-head is shown. The wood doors of these churches are sometimes elaborately carved. The usual type is a two-leaved square door, with a rounded centre-post, on which most of the carving is lavished. Many of these wood-carvings are so undoubtedly executed in the full tradition of good work that it is astonishing to find they mostly belong to this century, in some cases being done within the last 30 years. So tradition is dying hard in Crete. It is quite possible that these churches at Lyttos, not specially celebrated in the island, may point to some fairly interesting tit-bits of Byzantine work, with, perhaps, one or two new developments of plan in other parts of the island. But there are no outstanding churches of any size, and I doubt if results would go beyond the student's notebook. I have the names of three or four other churches in the island which are said to be interesting.

Following naturally from this, of course, is the subject of the monasteries, as they always have chapels attached. The situation of monasteries here, as elsewhere in the Levant, is often very delightful. One rides up a ringing stony pathway to a sense of summit and retirement and clean spacious comfort which is a relief to the wayfarer after the squalid village. They are usually more subjects for the sketcher than the architect in his more practical moods, but the monastery at Arkadhi shows a front of considerable interest, with that quaintness of combined Gothic-Classic influence so instructive often in unhackneyed forms. In this way it appears to be even more interesting than the armoury at Candia, though I regret that I have not been able to verify the detail from actual observation.

Unfortunately, I have reason to believe that this is one of the only things of its kind in Crete. The country is not rich in monastery work. Pashley mentions a monastery at Triadha, and gives a rough sketch, which appears picturesque enough. The pen-sketch of a deserted monastery on Mount Iuktas shows how the average of these buildings tell by their grouping but have no particular architectural qualities, strictly speaking.

(To be continued.)

BRITISH ARCHÆOLOGICAL ASSOCIATION.

THE sixth meeting of the session was held at 32, Sackville Street on February 6th, Mr. C. H. Compton, vice-president, in the chair. The paper of the evening was contributed and read by the Rev. C. H. Evelyn White, M.A., F.S.A., the subject being "Some recently discovered earthworks, the supposed site of a Roman Encampment at Cottenham, Cambridgeshire." A large plan of the earthworks was exhibited on the easel, and in order that the paper might be more readily followed, smaller copies of the plan were furnished for the members and visitors.

These earthworks, the author pointed out, are of a very singular nature, extending over 20 acres of ground, and, so far as he knew, had hitherto been unnoticed. Immediately to the north of Cottenham Parish Church is the Cottenham Lode, and abutting upon this lode to the north-west is an unploughed field of about 8½ acres, in which field are situated the principal entrenchments. This field is bounded on the north-east by the Car Dyke, while the roadway known as the Setchell Drove, running nearly parallel with Cottenham Lode, encloses it on that side. Here are visible large rectangular ramparts of chevron or zigzag formation, with a ditch on each side. The formation extends into the field beyond the Setchell Drove, which cuts through it, and there are remains of geometrically formed entrenchments in the surrounding fields. The trenches are well above the old water level of the Car Dyke, and vary in depth from six inches to two feet.

Mr. White exhibited a large number of pieces of Roman and other pottery, which is found in abundance all over the site; Samian, Upchurch, and red ware, some bearing potters' marks and decoration. One fragment of the neck of a vase, or urn, bore an unusual type of ornament in the shape of a series of straight lines going up from the collar. The only article of personal adornment found was a portion of a bone pin, having a series of notches for ornament, somewhat resembling one illustrated in Keller's "Lake Dwellings."

The question to be decided by antiquaries was whether these remains indicate the sites of a British settlement, or a military position, as the peculiar formation of the entrenchments would rather suggest. At all events, we had here ancient earthworks hitherto apparently unnoticed, with Roman pottery in abundance on all sides, surrounded by lines of British and Roman communications, and near to an ancient waterway that afforded means of access to the larger rivers in very early times.

In the discussion which followed the paper, Mr. Bull, a resident of Cottenham, who had been largely instrumental in bringing these remains to notice, gave his impressions of their nature. Mr. T. C. Gould pointed out that the character of the pottery exhibited, which was of the fourth century, and probably late in that, showed that the place had been occupied at that date. He also said that the so-called Samian ware was not real but British imitation of Samian, and was typical of a late period. The chevron, or zigzag formation of rampart was entirely new to him. The Rev. H. J. D. Astley remarked upon the seemingly unique character of the earthworks, contrasting it with the round or oval shape of the British fortifications and the Roman, which were rectangular.

It is probable that further explorations will take place, when the rampart will very likely be cut through and sections obtained.

COAL SMOKE ABATEMENT SOCIETY.

THE following draft letter has been addressed to the secretary of the London School Board:—

"By desire of the committee of the Coal Smoke Abatement Society, I beg the honour of bringing to your notice the work upon which it is engaged.

"My committee feels that, from your position as the only body representing the whole of the metropolis and as the largest owners of public buildings within its area, your support and assistance would be invaluable in furthering the objects of the society.

"To a body that has so successfully grappled with the problem of metropolitan education, it would be superfluous to insist on the lamentable effects produced on the inhabitants of our large cities, both physically and morally, by the foulness and gloom arising from smoke pollution.

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The evil is obvious and undisputed, and the object of the society is to reduce it as far as is reasonably possible.

"Their method of proceeding is twofold:—

"1. The Legislature, having decided that the nuisance is a preventible one, passed laws making the emission of black smoke from any chimney not used for domestic purposes, a punishable offence, and it is to the enforcement of the law, which had become almost a dead letter, that the society has devoted its main efforts, and that with marked and most encouraging success.

"2. The question of domestic chimneys is more difficult but scarcely less important. Nevertheless, the society has reason to believe that much can be done by the gradual education of public opinion to the duty and economical advantages of using smokeless grates or fuel.

"It is in the latter direction that the society ventures to beg your assistance. Many forms of grates and stoves are already in the market which are designed to materially reduce the evil of imperfect combustion, and the society would respectfully suggest that wherever occasion arises your Board would specify for some form of these apparatus being used in its buildings. Such an example set by so influential a body could not fail to have a most salutary effect, and be of the utmost assistance to the Society in its work.

"I should add that a similar suggestion has been made to her late Majesty's Government, and has been received by them with a promise to put it in operation without delay and whenever possible, and even to furnish facilities for trials in order to ascertain the best form of grate for the purpose. The committee therefore trust that your Board may be induced to take their suggestion into the same favourable consideration, and so materially help forward the work of checking a great and crying evil.

"I have the honour to be, yours very truly,

"W. B. RICHMOND, President.
"EDWARD JACKSON, Secretary."

SOME MODERN PRACTICES IN SEWAGE DISPOSAL.

MR. HENRY C. SHENTON has been awarded the President of the Society of Engineers' Gold Medal for a paper read during the past session on "Recent Practice in Sewage Disposal."

Mr. Shenton in the course of that paper first referred to the older methods of sewage disposal, pointing out that until recently failures of sewage works, constructed under all the older systems, had been notorious. As an example he quoted the failure of the combined chemical treatment, filtration, and land irrigation system at Sutton in 1895, two years after the works were constructed. Passing on to the modern system of bacterial purification, he stated that it consisted of the resolution of impurities into inoffensive materials by the agency of micro-organisms. He pointed out that changes, formerly considered chemical, were really due to the action of bacteria, and that the bacteria necessary for the purification of sewage already existed in it.

Turning to practical work, the author pointed out that for the bacterial treatment of sewage there were two methods. (1) That in which sewage passed through a tank where anaërobic organisms produced liquefaction of solids and putrefaction as a step towards purification, the effluent being then purified on bacteria beds, and (2) the system in which no tank was used, the crude sewage being purified on bacteria beds only.

In describing the practical construction and working of the bacteria bed, the author said it consisted of a water-tight tank, containing furnace clinker or other durable material likely to form a home for bacteria, into which sewage could be run, and in which it could be held to bring it into contact with bacteria. The effluent from this bed, after it had stood a short time, would be greatly purified, and could be again treated on second or third contact beds. In describing the septic tank the author said it was of practical use in getting rid of sludge, but he pointed out that the storage of putrid sewage in bulk was not an ideal arrangement. The septic tank is an air-tight chamber with trapped inlet and outlet, from which liquid only should be discharged, owing to the fact that solids must either float or sink.

While pointing out the many admirable results obtained at works constructed by the Septic Tank Syndicate, the author drew attention to the failure of a septic tank constructed by the Leicester Corporation. He then showed that a septic tank need not necessarily be air-tight, as open and closed tanks had produced identical results. He also stated that gas generated in the Exeter septic tank was used for lighting purposes and for generating steam by which an 8 horse-power engine was driven.

Mr. Shenton pointed out the folly of allowing road grit to go on to bacteria beds, and said that first-contact beds were generally much overworked. He suggested a possible improvement to obviate this, which consisted of an alteration in the construction of the first bed. He also said that automatic working was essential for success, and, in conclusion, he pointed out that the new system was equally applicable for the largest city or the smallest cottage. The paper was illustrated by diagrams and lime-light views of works.

A SUCCESSFUL INSTANCE OF SEWAGE FARMING.

TO be successful in sewage farming requires the existence of certain favourable conditions. To some extent the Aldershot Camp Farm would appear to possess them. A representative of *Engineering* has just lately visited it, going over every part, and testified from personal experience that it is quite free from nuisance, and that it fulfils its purpose most satisfactorily. It deals with the sewage of about 20,000 persons, the amount received being about a million gallons a day, as the water supply is very liberal. The farm has been converted by intelligent treatment from a nuisance and a continual menace to health into a modern establishment in which all the operations go on in a regular and ordinary manner. The farm has two important points in its favour, but these are partly balanced by several inconveniences. Its one grand feature is its soil. Although by no means uniform, this may be described as pure sand for a depth of several feet. It preserves its open texture, and a newly prepared seed bed is almost as heavy walking as the seashore above high-water mark. It makes, in fact, an ideal nidus for bacterial action; indeed, it is too ideal from the agricultural point of view, for the nitrates are rapidly washed through it, and there is little or no accumulation of fertilisers in the soil, such as would occur if it contained some alumina. Unfortunately, the land is very nearly level, and it is only by great care in alignment that sufficient fall can be obtained in the drains. The other important feature is that no storm water comes to the farm.

A YEAR'S SANITARY WORK AT ASTON

THE report on the year's work in connection with the Aston (Birmingham) sanitary inspector's department shows a considerable amount of work to have resulted from the presence of infectious disease. The scarlet fever cases numbered 406, typhoid fever 145, and diphtheria 82. Five hundred houses were fumigated, and 491 lots of bedding disinfected. The house to house visitation was systematic, and the results had been highly satisfactory. No fewer than 738 visits were paid to slaughter houses; and each of the 412 milkshops in the manor were twice inspected. Considerable attention was paid to the nuisance arising from the emission of dense black smoke from factory chimneys, and ten convictions were obtained.

NOTES OF COMPETITIONS OPEN.

Bisford.—March 25th.—Sewerage. Apply to Mr. C. J. Spencer, Public Offices, Basford, Nottingham.

Stretford.—April 1.—Swimming baths, &c. Premiums, 30, 20 & 10 guineas. Particulars (on £1 deposit) from Mr. G. H. Abrahams, U.D.C. Offices, Old Trafford, Manchester.

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The British Architect.

LONDON: FRIDAY, FEBRUARY 22, 1901.

THE LONDON WATER COMPANIES' PROPOSED NEW REGULATIONS.

THE Local Government Board inquiry into the proposed new set of regulations for the prevention of waste and misuse of water which the eight chief metropolitan water companies have presented to the Local Government Board for approval, does not reveal the companies in a very favourable light as regards their attitude towards the consumers. So far, the evidence of the chairman and the engineer of the New River Company has been decidedly more amusing than convincing. From the official position of the former we might have expected some weighty reasons for the proposed wholesale readjustment of water fittings and arrangements at the consumers' expense. But the chief point revealed by the clever cross-examination of this gentleman was his amazing ignorance as to the effect likely to be produced by the enforcement of the new regulations. There was, however, a pretty assumption of artlessness about some of his answers which led one to believe that this ignorance was not so deep or childlike as he would have us suppose. The engineer was technical and precise so far as discussing the proposed changes in the arrangements and fittings was concerned, but when it came to the consumers' side of the question he affected an indifference, which, taken in conjunction with the childlike ignorance of the chairman, did much to damage the water companies' position.

The fact of the matter is, the companies seek to secure themselves at the expense of the consumers. The idea of compelling the universal introduction of cisterns, which have been so strongly condemned by all sanitary and medical experts, is evidently of course with a view of lessening or doing away with their responsibility for the provision of a constant service. This is wrong in principle altogether. That the water supply of a large city or town should be fully adequate to provide for a constant service is of the first consequence, and scarcely of less importance than its purity, is indisputable. It passes comprehension how any reasonable and fair-minded person can argue in support of an intermittent supply. For sanitary reasons, also, the question of cisterns cannot be defended. Their abolition has been the definite aim of all progressive sanitary authorities, They are simply lodgments for the fouling and stagnating of the water supply. Who that has had experience of cisterns in small houses, but knows what insanitary nuisances they generally become in a very short time. Usually placed in some inaccessible position, and as often as not uncovered, their systematic periodical cleansing is of the most urgent importance. Yet how rarely is such cleansing properly effected at regular intervals. It is all very well to put the responsibility upon the sanitary authorities, and say that they ought to provide inspectors to see that people did have their cisterns regularly and properly cleaned out. But if the supply were constant, this suggested sanitary control of an insanitary arrangement would not be needed.

The engineer of the New River Company was conveniently ignorant upon most matters not strictly tectnical in character. He did not appear to be aware that in many other cities and towns besides London the local sanitary authorities were against the cistern arrangement, and that in a number of important provincial towns it was absolutely prohibited. Neither did he know that in many places a three-gallon flush for closets was a requirement, though he did not hesitate to describe it as wasteful. In fact, all he seemed to know was that the alteration of fittings and the provision of cisterns would prevent undue waste, and to this extent the consumers would benefit as well as the companies.

But though the companies are to benefit most largely by these proposed new regulations, all the cost of carrying out their provisions is to be borne by the consumers. This, both the chairman and the engineer of the New River Company consider to be quite an equitable arrangement. No doubt it is very smart business from their point of view. But we think it is a remarkably uujust proposal. If it were entirely a philanthropic arrangement on the part of the companies, and was presumably wholly for the benefit of the consumers, there would still be some hesitancy in the acceptance of proposals which, if carried out, must entail a heavy expenditure. Take one case alone. It is computed that there are in Hackney something like 50,000 houses now without cisterns, and that the cost involved of complying with the new regulations would not fall far short of half a million. Of course the landlords would have to pay in the first instance, but they in their turn would see to it that the cost did not ultimately fall upon them.

Yet if the companies are to share the benefit then they ought to share the cost. But what we see, and what we imagine most people will see who are not shareholders in the water companies, is that these new regulations are designed entirely for the benefit of the companies. The companies did not sit down with philanthropic intent to plan and contrive something for the special advantage of the consumers. Not a bit of it. If the balance of advantage had rested with the consumers we may depend upon it we should have heard nothing whatever of the new regulations. The idea the companies set out with, so far as one is able to judge, was to lessen their own responsibilities in regard to inadequacy of supply, to give the consumers as little as they could for their money, and at the same time to make the consumers pay the whole cost of carrying into effect this extremely benevolent and desirable intention!

THE R.I.B.A. AND THE LATE QUEEN VICTORIA.

AT the commencement of last Monday's meeting of the Royal Institute of British Architects, the secretary (Mr. W. J. Locke) read the following Address by the President (who was, we regret to learn, indisposed), referring to the death of Queen Victoria:—

"GENTLEMEN,—I must ask you all to rise for a moment as a tribute of respect to our late great Queen. Since last we met together here a most solemn and soul-stirring incident has occurred. The Empire has sustained an incomparable loss. The Victorian era, a most memorable epoch, has passed. The British Empire and the world in general, wherever civilisation exists, is mourning the death of our late Sovereign. Europe, Asia, Africa, America, and Australia have been deeply touched, and have all given kindly expression to their profound sympathy with us. It is not only the loss of a great ruler that is mourned, but also the loss of an inexpressible influence of a good, religious, wise, and gracious lady, and of a sympathetic woman. Who can have read without having been deeply touched her oft-repeated solicitude for those in distress, whether her soldiers, sailors, or others of her subjects? Our late Queen's influence must necessarily have been greater than that of any previous monarch in the world's history. For Queen Victoria's Empire has been the only one in which influence, whether for good or evil, could have been felt over an extent of territory so great that on it the sun never sets.

"But we, as members of this Institute, have even a closer tie, a deeper cause for mourning. Her late Majesty was not only our beloved Queen, but also our most gracious, beneficent patron. Her kindly interest in us commenced with the action of her Royal Consort in our foundation, and has been evinced from time to time during the whole of her long and glorious reign. Those who have had the honour of receiving from this Institute the Queen's Gold Medal for Architecture will cherish no possession more highly. It is a memento of the greatest Queen the world has seen, and also of the kindly encouragement her late Majesty so beneficently extended to influence for good our art of architecture. Her reign has been the most memorable in the annals of this country for the marvellous increase of her Empire, and its unrivalled prosperity, as well as for the unprecedented advancement in learning, science, and art. I feel sure there is not one amongst us who not only deeply sorrows, but who must also feel a loneliness

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at heart at the loss of our late beloved Sovereign Queen Victoria. There is a great blank.

"But in our grief we have happiness in welcoming our King's accession. From his known affection and sympathetic understanding of his people, his careful attention to his duties, and his gracious promises to follow in the footsteps of his Royal mother, we feel every confidence that he will so wisely rule as to endear himself to his subjects, who will entertain the deepest feelings of loyalty and devotion to His Most Gracious Majesty King Edward the Seventh. God save the King!

"As a matter of form I must ask you to ratify the action of your President and Council in sending to His Majesty an Address expressing on behalf of this Institute and its allied societies the sincere expression of our sorrow and loyalty."

The Address, which was printed in last week's issue of the *British Architect*, was then read by the secretary. It had, we understand, already been sent to the King.

NOTES ON CURRENT EVENTS.

AN announcement was made at the meeting of the Royal Institute of British Architects on Monday evening last respecting this year's Royal Gold Medal. In the ordinary course of events the name of the Royal Gold Medallist would have been announced, but as the Medal was a personal gift of the late Queen, the Council deemed it inexpedient to approach the King on the subject at the present moment. The Council intend, however, to make application shortly to His Majesty in reference to the matter.

THE competition for a public library at Leeds, to be erected in Nineveh Road, has been decided. The first premium of £20 has been awarded to Mr. William Bakewell, F.R.I.B.A., of Park Square, Leeds, and the 2nd premium of £10 to Messrs. Buttery and Bird, of Albion Walk Chambers, Leeds. Mr. Leonard Stokes, F.R.I.B.A. of Westminster, S.W., acted as assessor in the competition.

THE Free Library Committee of the Keighley Corporation invite competitive plans for the erection of a public library in North Street, Keighley, at a cost not exceeding £9,000. Premiums of £50, £30, and £20 are offered. The President of the Royal Institute of British Architects will be asked to appoint an assessor. Conditions and instructions, together with plan of site, are to be had from Mr. W. H. Hopkinson, A.M.Inst.C.E., the borough engineer, and April 30th is the date fixed for sending in designs.

WE see it stated in a local paper's report of the decision of the Cardiff asylum competition that the assessor, Mr. G. T. Hine, architect to the Lunacy Commissioners, remarked in reporting his award to the corporation committee that "the winners were skilled in asylum work and had twice beaten him, so that the committee could see that they were no novices. This fact, however, was important, for there were many firms who could produce high-class designs but had little experience in executing large contracts such as this would be." It seems to us a little unfortunate that the assessor in a competition of this kind should be familiar with the work of the competitors. As architect to the Lunacy Commissioners the assessor would also necessarily become more or less familiarised with the work of architects specially engaged in asylum designing, and we cannot help thinking it would be just as well for architects in official positions such as the architect to the Lunacy Commissioners not to be called upon to act as assessors in competitions for buildings which they have to deal with in their official capacity. In the assessing of architectural competitions there should be no loophole allowed that can be avoided for giving the slightest cause for dissatisfaction to the competitors.

MR. THOMAS BLASHILL, F.R.I.B.A., is to read a paper at the Surveyors' Institution, on Monday evening next, the 25th inst., on "The Present Condition of the Building Industry." The annual dinner of the Institution is to be held at the Holborn Restaurant, on Monday, the 4th of March.

NEXT Monday evening the presentation of the prizes to the successful students in the R.I.B.A. competitions last January takes place. The President will deliver an address to the students, and a criticism on the students' work will also be read.

WE are glad to note that the London County Council have decided to appoint a new standing committee of the Council for the purpose of considering and reporting upon questions relating to historic buildings in London, and of dealing with the preservation and publication of the historical records of the Council, the administration of the library, and other cognate matters.

REFERENCE was made at the Wilts. County Council meeting on Wednesday to the fall of stones at Stonehenge, and considerable discussion ensued as to the taking of steps for the preservation of the remains. Professor Storey Maskelyne suggested the appointment of a small committee, not necessarily composed entirely of members of the council, but Lord Edmond Fitzmaurice, M.P. (the Chairman of the Council), explained that the matter was already being dealt with by the Charities and Records Committee, to whom the question of ancient monuments had been referred. It was also stated that the committee was in communication with the landowner and with the Society of Antiquaries, and hoped to report definitely at the next meeting. It was generally felt by the members of the Council that the Council should hold itself in readiness to assist financially any association which took the matter in hand, but the opinion was also expressed that it was a national matter.

A PART of Old London Wall has been discovered in the course of digging operations at the corner of Jewry Street, Aldgate, and Aldgate High Street. The fragment is believed to be the foundation of the two towers of Aldgate. It is from 8 ft. to 10 ft. wide, very solidly built, and was found about 3 ft. below the ground level.

AN interesting discovery has just been made at the Priory Farm, Studley. The building, from which the house is apart, and called The Priory, was formerly a monastery of the Cistercian order of monks. Recently some workmen have been engaged in making excavations, when they came upon a large stone coffin, probably of great age, containing a skeleton, supposed to be the remains of a young monk of high order. The coffin is nearly a ton in weight, and measures 6 ft. 2 in. in length. On it is a cross, and there are also other markings, but the words have not been deciphered. The walls of the coffin are 4½ in. thick. A few days previously the same workmen discovered a large slab bearing the date 1500.

THE work in connection with the restoration of Rothesay Castle, which was in progress when the death of Lord Bute took place, and which was then suspended, is to be renewed at once in a limited way. It has been decided to restore the ancient banqueting hall, in view of its being requisitioned during the forthcoming Quin-centenary Celebrations. The ceiling will be carried out in a permanent manner, but in the meantime the doors, windows, and roof will be more or less of a temporary nature. Immediately thereafter all building materials will be cleared out, and the public will have access to the ancient building as formerly.

THE remaining Monmouthshire estates of the Duke of Beaufort are, it is definitely stated, to be disposed of next month by public auction. Included in the sale are Troy House, where the late Duke died, Monmouth Castle, where Henry V. was born, and other minor properties.

THE castle of William the Conqueror at Bonneville in Normandy has just been sold by auction for £3,200.

AT a general assembly of the Royal Scottish Academy held on the 13th inst. Mr. Pittendrigh Macgillivray,

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Associate, was advanced to the rank of Academician. Mr. Pittendrigh Macgillivray, who is a native of Aberdeenshire, is the son of an artist whose sculptures found a place in exhibitions both in Edinburgh and in Glasgow. While resident in Glasgow the new Academician made a considerable name for himself as a portrait sculptor, while in decorative work he contributed to the adornment of the Glasgow Municipal Buildings and the Glasgow Medical School. Mr. Macgillivray is now established in Edinburgh.

THE Boston (U.S.) Museum of Fine Arts has decided to purchase from the Earl of Carlisle the painting by Velasquez entitled "Prince Balthazar Carlos and his Dwarf." The price is said to be £19,000.

A FEW well-known artists and lovers of art are endeavouring, says the *Westminster Gazette*, to raise a fund for the purpose of finishing the Alfred Stevens monument to Wellington in St. Paul's Cathedral. It will be remembered that it was in July, 1857, about five years after the death of the victor of Waterloo, that the first exhibition of upwards of eighty competitive designs for the monument were thrown open for public inspection in Westminster Hall. There have been several attempts made to secure the completion of the monument, but so far public interest in the project has not been sufficiently awakened to respond to the appeal for funds.

THE death is announced of M. Paul de Vinge, the eminent sculptor whose works embellish many public buildings in Brussels and other towns of Belgium, at the comparatively early age of 57. To visitors to the Belgian capital he was best known as the author of the admirable group "le génie prenant son vol," which adorns the portico of the Fine Arts Palace in the Rue de la Régence.

THE sculpture in connection with Glasgow Exhibition is being designed by Mr. Albert H. Hodge, of St. Paul's Studios, London. Mr. Hodge, who is quite a young man and was a Glasgow School of Art student, is an architect practising in London. It is intended that a statue of King Edward shall be placed under the dome, forming a prominent feature in the central avenue. The statue is to measure 16 ft., and to stand on a pedestal 10 ft. high. His Majesty is represented in the robes worn by him in opening Parliament. He stands with one foot resting on a globe, as symbolic of ruling. The large statue of "Light," which is to be placed on the top of the dome, has been completed by Mr. Hodge, and will soon be placed. It takes the form of a great winged female figure, 12 ft. high, the wings stretching 12 ft. The right arm is extended upward, and in the hand she carries a torch electrically lighted, while in the left hand she bears a branch of palm. The lips are parted as if making proclamation. On the head is a helmet, while the robe from waist to ankle spreads out in ample folds. The figure is represented as airily floating, the great toe of one foot resting on the golden ball over the dome. Mr. Hodge, who removed from Glasgow to London at the beginning of last year, is at present carrying out various commissions in Glasgow, including the Clydebank Municipal Buildings.

THE Fine Arts section of the Glasgow Exhibition promises to be an exceedingly fine and interesting show. The loans already promised of artistic and historical treasures are many and important, and include permission from the King to allow selections to be made from the treasures at Marlborough House. Amongst others who have promised loans are the Duke of Argyle, the Duke of Buccleuch, the Duke of Devonshire, the Duke of Montrose, the Duke of Norfolk, the Marquis of Ailsa, the Marquis of Breadalbane, the Earl of Elgin, the Earl of Home, the Earl of Mansfield, the Earl of Mar and Kellie, the Countess-Dowager of Seafield, Lord Balfour of Burleigh, Lord Blythswood, Lord Herries, Lord Rothschild, Sir William Agnew, Sir Thomas Glen-Coats, and Sir Charles Tennant.

THE discussion which took place last week at the Sanitary Institute with reference to the state of the streets in London was unanimous upon one point at least, and that was, that their condition was bad enough to need mending. One or two speakers seemed to think it was not so terribly bad as some folks would appear to make out. Still they concurred in the opinion that there was need for something to be done to improve matters. There are difficulties to be overcome, no doubt, and not the least is the fact that London is divided up into a large number of separate districts, and consequently the sanitary arrangements exhibit a lack of uniformity which militates against uniformly clean and well kept streets. It seems to us that one of the first things to be desired and aimed at is uniformity of action amongst the district or borough authorities. They should all work together towards one common end. There is no doubt that street washing needs to be done on a more universal and systematic plan. Here in King Street, Covent Garden, we have no complaint to make; everything is done regularly and thoroughly, and consequently our street is always clean and sweet. But this ought to obtain everywhere. Then, of course, there is the question of street-paving, which shows such variety in London. And even this variety is not the worst feature, for whatever the system may be it is being constantly broken up. If the streets belonged to the public instead of being given over by Act of Parliament to various companies we should know better what to do. As things stand at present we agree with Sir Alexander Binnie that a more universal and systematic system of street washing is the most important and pressing need.

A PETITION was presented at last week's meeting of the London Corporation from inhabitants and ratepayers of Cripplegate Without relative to the recent acquisition by the Corporation of the premises Nos. 1 to 6, Fore Street, and urging that when these are demolished the whole of the site backing on the north wall of Cripplegate Church should be left unbuilt upon. It was stated that the history of St. Giles, Cripplegate, goes as far back as 1090. Oliver Cromwell was married there, and the church contains monuments to Milton, Martin Frobisher, John Foxe (author of the "Book of Martyrs"), and others. The petition was referred to a committee for consideration.

EVEN York, which, like Chester, still retains much of its ancient character in its buildings, walls, and narrow thoroughfares, has to yield to the exigencies of modern progress. The corporation can no longer afford to ignore the claims of public health and convenience even if they desired to do so, which we presume they would not. And now that the traffic has been for some years past so largely on the increase in the city, it has become almost imperative that some widening of the narrow thoroughfares in the busy centre should be carried out. Hence the corporation have formulated a scheme, which was the subject of a Local Government inquiry the other day, for widening Coppergate, Nessgate, and Spurriergate. Coppergate is a narrow and specially busy thoroughfare running from Nessgate to Pavement, and for fully half its length only wide enough for one vehicle. The footpath on either side is proportionately narrow. It is proposed to open this thoroughfare out for its entire length by the demolition of property along its north side. Nessgate, where further powers are sought, is one of the busiest avenues to the city. Its entire length is not more than 106 ft., the width at the junction with High Ousegate only 26 ft. 7 in., and at the other end 34 ft. The corporation have scheduled practically the whole of the property on the west side, and will widen to at least 42 ft. Spurriergate, where the traffic is constantly congested, it is proposed to widen to 36 ft.

AT a meeting of the Edinburgh Architectural Society on on the 13th inst., Mr. William A. Agnew gave a lecture upon "Electric Power in Buildings." In opening, Mr. Agnew referred to the generation of the electric current, and to its commercial moderation through the conversion of steam, water, or other power, by means of the dynamo electric machine. The principle of the motor and the part which the electro-magnet played in its construction were then described, and also its power of converting electric energy into driving power for lifts, etc. In the working of elevators electricity was often of great advantage in towns where the motor could be supplied from the electric mains. As applied to heating the cost of electricity was as yet too great for extensive use, but for bedrooms or offices electric radiators have been found very convenient. Two examples of these radiators were shown, in one of which the heaters

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were of platinum, and in the other carbon threads in globes exhausted of air. The lecture concluded with a description of the construction of the various types of ventilating fans and their cost of working. Throughout the lecture the remarks were illustrated by numerous experiments and limelight views.

THERE seems to have been a steady increase of traffic lately on the "Twopenny Tube." Presiding at the half-yearly meeting of the Central London Railway last week Sir H. Oakley, the chairman, stated that the average number of passengers carried on the line during January was 108,000 daily, showing a steady increase. Out of the 15,000,000 passengers carried since the opening of the line nearly 1,500,000 were workmen, travelling at the reduced fare of 2d. for the return journey, The numbers were increasing. The one serious difficulty they had now to face was in regard to bringing the trains round, due to the absence of a loop at each extremity of the line. The cost of such a loop at Shepherds Bush would probably be about £50,000, and in the City £400,000. The directors were satisfied, however, that if a loop in the City were constructed and an additional station provided at Liverpool Street, the large outlay would be easily repaid, and a Bill had been deposited in Parliament applying for powers to construct the loops. A dividend on the share capital of 2½ per cent. was declared.

THE Sanitary Protection Association of Scotland held their 23rd annual meeting on Friday last at Edinburgh. The Council reported another satisfactory year's operations, and that there had been a considerable fluctuation in the Edinburgh membership. Twenty-five new members were enrolled and 32 new subscribers had special examinations. The work at the Dundee and St. Andrew's branches had maintained the improvement effected in former years, and the membership at Ayr and North Berwick, the two last formed branches, showed a slow but steady increase. The demand for advice and assistance from country clients continued. The income of the Association for the past year was £2,261 6s. 8d., the expenditure £1,949 16s. 6d. For the previous year the income was £2,163 9s. 8d., and the expenditure £2,078 17s. 9d.

IN an open London suburb, Dr. Allen Macfayden, of the Jenner Institute of Preventive Medicine, discovered 20,000 dust particles in a cubic centimetre of air—equal to about 0·061 of a cubic inch—while in a yard in the centre of London the number amounted to 500,000. So he informed an audience at the Royal Institution to whom he was lecturing. In the City the air was loaded to the extent of about 900 per cent. more than in the suburb. By way of a comforting set off to this statement, let us be truly thankful, Dr. Macfayden informed his hearers, that he found in the open air of London only one microbe to every 38,000,000 or so of dust particles. In the air of a room among 184,000,000 of dust atoms there was only one germ. For which sanitary mercy let us be truly thankful.

THE London County Council agreed on Tuesday to the Finance Committee's recommendation that the committee should take the necessary steps to ascertain the views of the Home Secretary on the following proposals:—(*a*) The extension of the sinking fund period for capital raised for the erection of working-class dwellings, and (*b*) the power to reckon the freehold land on which the dwellings are erected as an asset against debt.

AT the same meeting the Council also agreed to the recommendation of the Highways Committee: "That the estimates for £145,000 and £478,500 submitted by the Finance Committee be approved; that the expenditure be authorised for the purposes of reconstruction for electric traction of the Council's tramways between (*a*) Westminster Bridge Road and Upper Tooting Road; (*b*) Kennington Park Road (at its junction with Kennington Road) and the terminus at Blackfriars Road; and (*c*) St. George's Circus and the terminus in Waterloo Road, of sums not exceeding these amounts respectively in respect of (1) buildings and railway sidings; and (2) lines, machinery, generating plant, rolling-stock, and electrical equipment.

THE APOLLO THEATRE.

(*See Illustrations.*)

NOTWITHSTANDING the marvellous activity in theatre-building during the few years past, we have had to deplore the conspicuous lack of original, or even really good traditional, design in their erection. Only in, perhaps, two or three instances does there appear to have been any well-considered attempt to give theatres a definitely new, as well as characteristic, design. It is, herefore, with genuine pleasure we have to note the results of Mr. Lewen Sharp's efforts in the new Apollo Theatre, Shaftesbury Avenue, for Mr. Henry Lowenfeld, as it shows the employment of an architect who can make theatre-building contribute to the real improvement of our street architecture.

Though the architect has not departed from a well-known type of design in French Renaissance, he has managed by the proportion and distribution of parts to give his façade a striking and uncommon effect. The two domed pavilions which flank the front, with their admirable architectural sculpture, at once give an air of distinction to the design, and the proportion of solids and voids in the façade, and the distribution of ornament, are most happy; it is seldom we find the courage to retain so much plain wall surface in a theatre design, or such capital restraint in the use of ornament. The sculpture, by Mr. T. Simpson, is one of the very best recent examples of proper architectural sculpture in London; for whilst the sculptor holds his own he does not do so at the expense of the architect. When sculpture really adorns architecture and amplifies its lines, as we see it here, we have cause to be grateful.

Apart from its consistent scheme of decoration in Louis XIV. manner, the interior of the Apollo Theatre has special claims to notice, as will be seen from the following particulars:—

The plan of the building is simple. Long corridors and passages have been avoided. A staircase at each of the four corners of the stalls and dress circle makes access to these portions of the house direct and easy, whilst the upper circle and gallery have each two separate staircases for their special service. The furthest gallery seat is only 27½ yards away from the street, and the whole theatre can be cleared in two minutes. The building is of stone, brick, and steel, 88 tons of the latter material having been used in its construction. Wood has been entirely eliminated from the auditorium, and the theatre has been pronounced by leading experts to be absolutely fireproof. Conclusive proof of this is provided by the fact that the fire insurance companies have accepted the insurance at the smallest premium yet charged for a theatre. The seating capacity is for 1,200 persons, and every seat in the house commands an uninterrupted view of the stage. There are no pillars in the auditorium, whilst the ceilings over the pit, dress circle, upper circle, and gallery are so high that they do not impair the free view of the spectators in any part of the theatre. Promenades, furnished with sofas and chairs, have been provided at the back of every part of the house, including the pit and gallery. The refreshment saloons will be under the direct control of the management, and every care will be taken that the refreshments supplied shall be equal to those found in the best clubs and restaurants.

For the first time in England the entire air of the auditorium will be pumped out several times in every hour, and completely replenished with pure fresh air of a suitable temperature. A large shaft (8 feet by 10 feet, fitted with air pumps, carries fresh air from the roof of the building into a large vault underneath the entire auditorium. Here, the air is first filtered and purified, and then, according to the season, heated or cooled separately for every tier of the house. Afterwards it enters the auditorium by means of an elaborate system of channels leading into every part of the house through over 500 wide gratings. An area of 200 square feet in the main ceiling of the auditorium is perforated, and communicates with a second air shaft fitted

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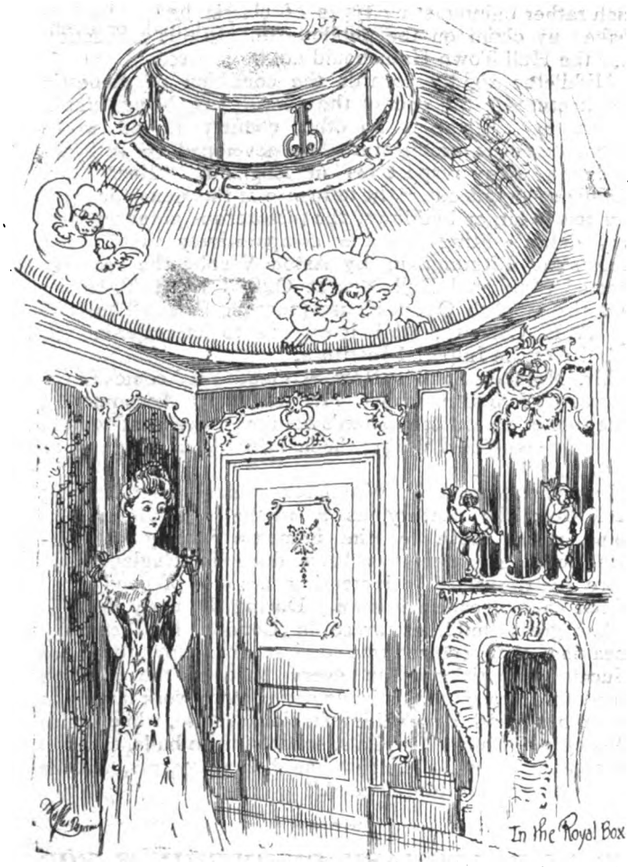
with air chambers for the purpose of drawing the vitiated air from the building. Thus, by regulating the speed of the supply and exhaust pumps, the air in the auditorium



can be changed at will. The pumps are capable of supplying 1½ million cubic feet of fresh air warmed or cooled every hour, and a system of electric thermometers indicates automatically by means of bells to an operator in the basement, the temperature in every part of the house. He is thus able to correct instantly any abnormal rise or fall. By these means the gallery can be kept at the same temperature as the stalls, and in fact every part of the house can be made equally warm or cool. Draughts have been guarded against by placing at every exit and entrance not less than three, and in most cases four, doors between the auditorum and street. The lobbies so formed are warmed by radiators, the largest of these being placed nearest to the outside, an arrangement which prevents the possibility of cold air entering the theatre. Double windows are provided throughout.

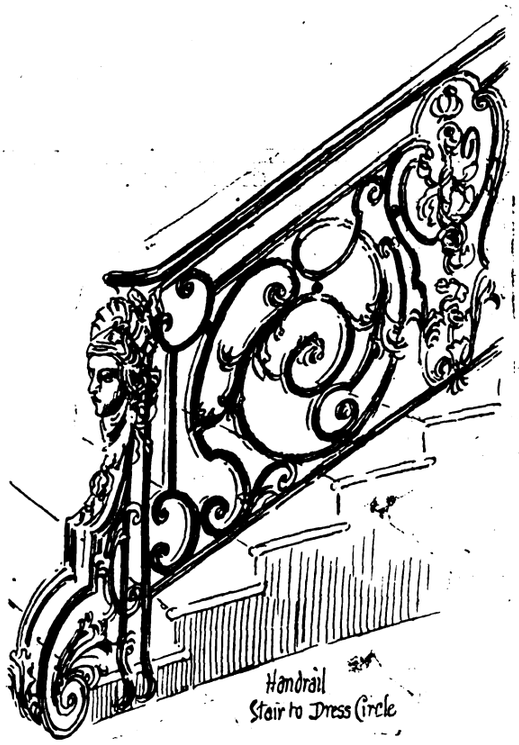
Every part of the house is divided into two blocks, "A" and "B," and the admission tickets bear these letters. Sign boards indicate the nearest routes to each block.

The special construction of the orchestra, invented by Mr. Lowenfeld, is intended to produce the proper relation

in the sound of the various instruments to each other, and to avoid any possible muffling by loss of tonality. The floor space of the orchestra is in the form of a hollow oval, and the surface is hard and highly glazed. A wooden sounding board is placed over this hollow surface, and a three-tier rostrum on glass legs stands on the sounding board.

The violins are placed on the highest tier, the wood wind and remaining strings on the next, whilst the lowest part is assigned to the brass and drums. By this means the thin violin sound waves rise before being mixed with the stronger wood wind and bass sounds, whilst the brass and drums are so removed that they do not interfere with either. The hollow floor and sounding board truly reflect the whole mass of tone. The idea is a free adaptation of Richard Wagner's construction at Bayreuth.

The lighting is entirely by electricity. Two separate and distinct systems of wiring are supplied by two different companies, and each company's wires are further subdivided into circuits. Four sources of supply thus guard against any chance of a breakdown. The stage is illuminated by a four-colour scheme, viz., white, red, blue, and yellow, a separate circuit being provided for each. Any desired colour effect can therefore be produced. A novel method of throwing light direct on the faces of the actors, invented by Mr. Lowenfeld, has here for the first time been practically carried into effect. From a space between the stalls and dress-circle boxes



limelights illuminate the stage on the level of the actors' faces without destroying the illusion, as lights thrown from the circle do, a plan frequently adopted in America. By the old method the actor's face is *never lit from the front*, which produces unnatural shadows. By means of the scheme now adopted the faces are lit directly from the front, and equally from both sides, so that the objectionable shadows are avoided. This plan is quite new, and may require experimental perfecting, but it seems a step in the direction of ultimately realising Professor Herkomer's dream of abolishing the footlights.

The stage is large enough to admit of the production of the most elaborate plays. By means of counter-weighted bars and bridges, one man can raise or lower the heaviest pieces of scenery with one hand without an effort. The ordinary fly-rails have been abandoned for a working gallery 8 ft. above the stage level, whilst a wide tunnel under the street, behind the back wall of the stage, facilitates inter-communication, and serves as a green room. In addition, a large number of small but important technical improvements in the stage working have been introduced. The dressing rooms occupy a separate block, and number 23 rooms in all. They are large, lofty, and

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airy, are lighted by electricity, and warmed by steam pipes, and each has its own hot and cold water supply. A large rehearsal room, with class rooms adjoining, will serve for the singing, dancing, fencing, and elocution lessons given in the dramatic and vocal school attached to the theatre.

The drainage plan is so arranged that there are no drains whatever under any part of the theatre. A deep level channel leading from the main deep level drain in Coventry Street has been constructed at great expense for the exclusive use of the theatre. The lowest part of the building is thereby efficiently provided for.

As will be gathered from our illustrations this week and next, the character of the decoration is well preserved throughout the interior, a type of design having been adopted which lends itself to the many curves and difficulties which the architect has to contend with in a theatre interior. The constructive effect of the ceiling over the gallery is cleverly managed, a point often developing much awkwardness of effect. The decoration generally is in white and gold, with crimson stuff panels.

All the plastic and other decoration has been admirably carried out by Messrs. Hooydonk, who will be able to point to this contract as a capital example of what they can accomplish. The ventilation, of which so much is expected, is by Messrs. Korting; the upholstery by Mr. T. Sandilands, and the electric lighting by Messrs. Blackburn & Starling, under the direction of Mr. T. Digby. The contractor was Mr. Walter Wallis, the sculptor Mr. T. Simpson. The architect is Mr. Lewen Sharp, of 3, Duke Street, Adelphi.

THE ARCHITECTURE OF THE NINETEENTH CENTURY.

THE paper read by Mr. G. A. T. Middleton yesterday (Thursday) evening, before the Society of Architects, certainly had the merit of not being too long, but, on the other hand, this attempt to be brief induced a certain superficiality of treatment not warranted by the importance of the subject. In fact, the paper consisted for the most of brief references to some of the more notable buildings of the century, to each of which he attached the label of his own personal opinion as to their merits. He alluded first to the Roman and Grecian schools of the early part of the century, marking out for mention the British Museum, by Sir Robert Smirke; the Liverpool Athenæum, by Thomas Harrison; St. George's Hall, Liverpool, by H. L. Elmes (which he very properly describes as one of the really great buildings of the century); Hanover Chapel, Regent Street (now pulled down), by C. R. Cockerell; and St. Pancras Church, by Inwood. Then a reference was made to the revival of pure Italian Renaissance "responsible for the Travellers' and the Reform Clubs, by Sir Charles Barry; the Carlton Club, by Sir Robert Smirke; the Museum of Practical Geology and the West End of Somerset House, by Sir James Pennethorne; and St. Thomas's Hospital, by Henry Currey."

Mr. Middleton likened Gothic to a hothouse plant, which "withered with extreme rapidity after displaying a few flowers of great beauty." Of the architects whose names are associated with this revival Mr. Middleton refers to Sir Charles Barry, E. M. Barry, Butterfield, Sir George Gilbert Scott, Paley, Street, Burgess, J. L. Pearson, Bodley, and Sir Arthur Blomfield. Amongst these should certainly be included E. W. Godwin, whose Northampton Town Hall is a perfect example of nineteenth century Gothic, and whose knowledge of Gothic was as sound and thorough as that of any architect of his time. J. D. Sedding and Alfred Waterhouse, however, he mentions. The last-named architect's Natural History Museum he regards as his greatest work, and considers that it will undoubtedly receive greater recognition by posterity than has been bestowed upon it by Mr. Waterhouse's contemporary critics.

Bolton Town Hall, Glasgow Municipal Buildings, and the Brompton Oratory were next alluded to by Mr. Middleton. This last he terms "incomparably the finest Renaissance church erected in England since the days of Wren." In referring to the town hall at Bolton, however, he falls into a somewhat singular error in stating that the Leeds Town Hall was a replica of the one at Bolton. Leeds Town Hall was itself the prototype, and a very fine building of its kind. Bolton was inspired by it, only on a much smaller scale, whilst Portsmouth was the result of a determined attempt to reproduce Leeds over again. This, too, at a time when one would have expected that such rather uninteresting types of classic had ceased to make any claim on the public taste. In this connection also the Hull Town Hall should not be omitted.

Middleton rightly regards the condition of domestic architecture at the end of the century as being highly satisfactory. There is no other country in the world where domestic architecture has developed so satisfactorily in every respect as in England. "But," Mr. Middleton points out, "the influence of this domestic style was felt in larger buildings, the picturesque grouping and tiny detail suiting well the comparatively small Law Courts at Birmingham, by Aston Webb; the recently erected Municipal Buildings at Oxford, by H. T. Hare; and the English Opera House (now the Palace Theatre), by T. E. Collcutt; while it went far to detract from the nobility of the Imperial Institute."

Mr. Norman Shaw's New Scotland Yard comes in for a word of praise, whilst Mr. Belcher's Accountants' Institute is, in Mr. Middleton's opinion, "the most notable building completed during the last decade in England or elsewhere."

In conclusion, Mr. Middleton remarks:—"Looking back over the century as a whole, one cannot help being struck both by the immense variety of first-rate building which has been done in England, and more by the steadily increasing amount of good work which each decade has seen. During the early decades a few great buildings arose in London, but generally speaking architecture was a lost art; now there are educated practitioners in every part of the country, who are producing artistically satisfactory work largely in accordance with a prevailing fashion, or style, while buildings of importance, hospitals, schools, town halls, etc., are rising everywhere. The past has shown progress, and the prospect for the future is good."

MR. W. R. LETHABY ON OPENINGS FOR ART STUDENTS.

"FIRST find your opening and then fit yourself for it" was the advice given by Mr. Lethaby to the students of the Birmingham Municipal School of Art, in distributing the prizes to the successful students on the 15th inst. But before giving this and other advice to the students, Mr. Lethaby specially referred to the Birmingham school and its position in regard to other similar schools That school he suggested was, with its excellence and the varied channels of its endeavours, hardly a typical institution; in fact it was too good to be representative. In many respects it stood first in the United Kingdom, and it had done pioneer work in the direction in which future improvement in the work of such schools was to be hoped for. Mr. Lethaby then passed on to speak of the modern divisibility between art and production. No such divisibility, he said, existed in the Middle Ages. "When art was everywhere, no special consideration was given to it. Artists as a special class were invented when art decayed and became scarce." But the "customary" art of the Middle Ages, and the conditions under which it was produced have passed away. And now the question is how can students best fit themselves for practical employment as artists?

Over the doors of our art schools Mr. Lethaby said he would write "Art is no vocation," and immediately explain that the artist was not one who knew about many crafts, but a skilled worker at one of them. The first purpose of art schools should be to provide fit instruction for the learners engaged in the several arts and crafts, and the second to direct the minds of those who came to it unattached into definite channels. Let students first find the opening before they began to fit themselves for it. The student might be often misled by the idea that at the end of a year or two at an art school he would be fitted to earn his living. The professional art student might find himself when too old for technical learning more than ever cut off from the hard world of fact. The A B C of the position was, "find an opening, or at least what looked like an opening, join a school which had a class as germane as

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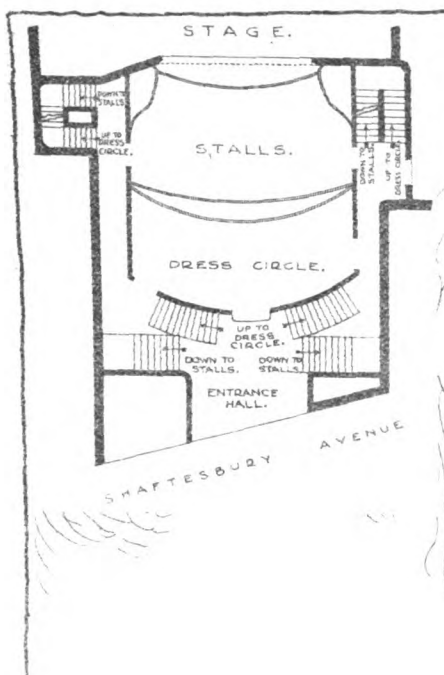

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THE APOLLO THEATRE
SHAFTESBURY AVENUE

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A ceiling light
in dress circle

Entrance Foyer

THE APOLLO THEATRE
LEWEN SHARP ARCHITECT.

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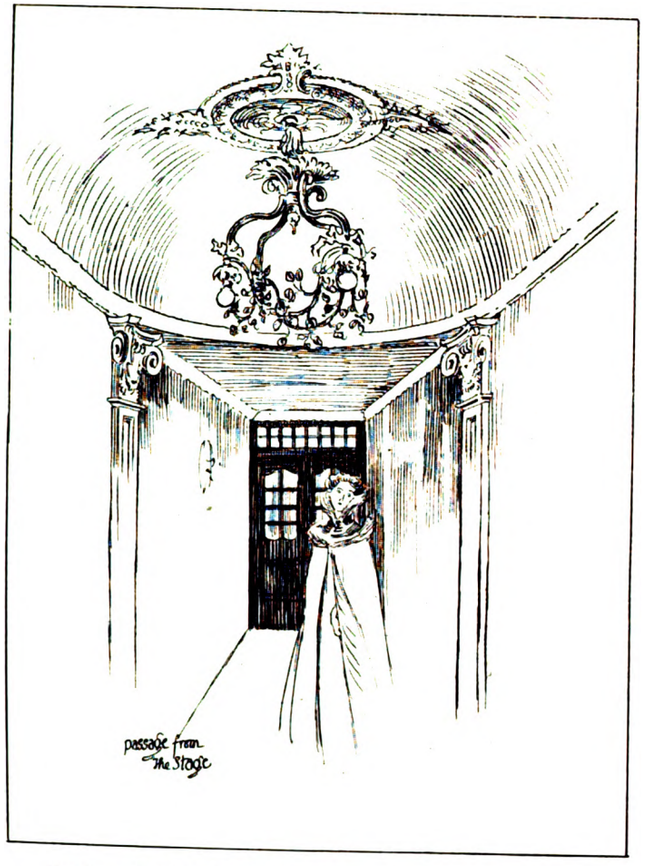
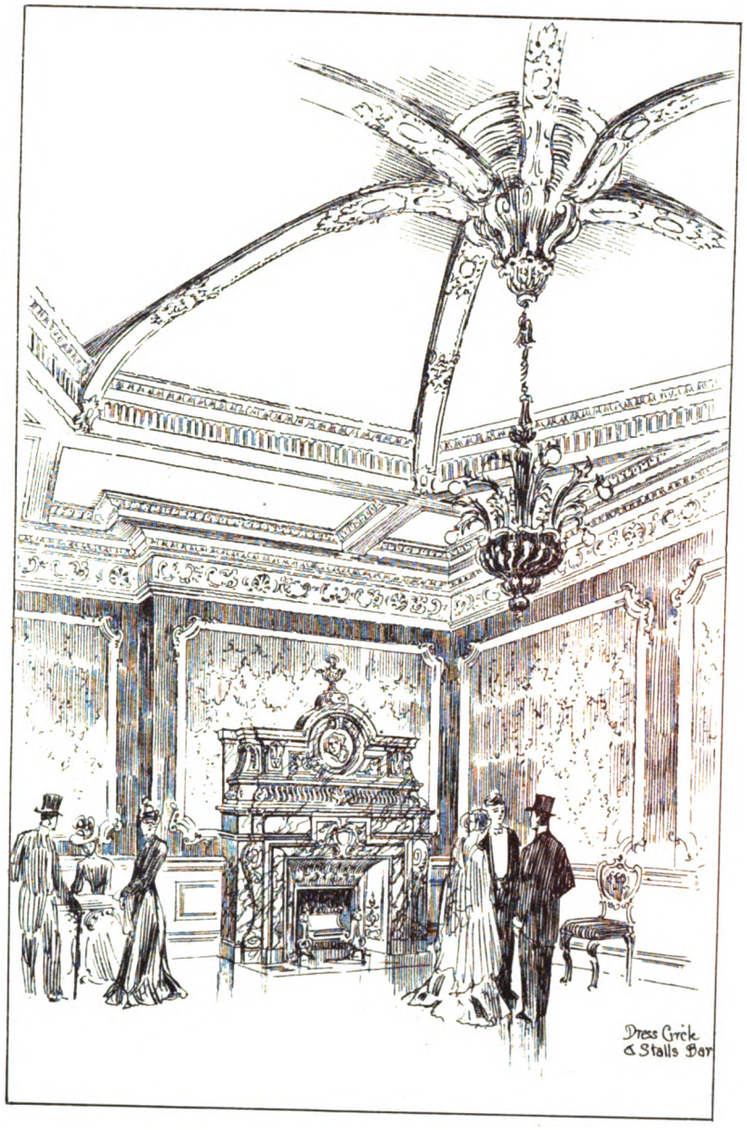


THE APOLLO THEATRE SHAFTESBURY



AVENUE. LONDON. LEWEN SHARP ARCHITECT.

THE BRITISH ARCHITECT, FEBRUARY 22 1901 COPYRIGHT.

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possible to what you have decided to be your calling, and have a wide craft ambition."

Suggesting some thirty-four branches of activity open to the art student, Mr. Lethaby said that in modern wood carving, which in England was nearly entirely confined to the execution of hack work to the order of architects, a career might be made by a trained artist who could afford to set up a shop for the promotion and sale of such things, as carved boxes, picture frames, and the like. A maker of pleasant stone or lead garden statues and vases might well find a reward in it. So also of a modeller making himself known for portrait medallions, or small figure compositions not too great or good for ordinary houses. Again hundreds of thousands every year must be spent on grave stones mostly outcasts from art. The beautiful art of topographical draughtsmanship seemed almost forgotten until Mr. New, trained in that school, showed what one artist might do in practising that exquisite art on new lines. Even the art of copying itself had its altitudes, as was shown in their exquisite copy of Carpaccio's St. George, by Mr. Fairfax Murray. In portrait painting too much pre-occupation about academically rewarded art had ruined the portraits. What they wanted was a kind of human topography—patient, refined studies of people. Why could not some girl, who could draw, do a portrait in two hours for a guinea? There was no idea why the oil painting itself should not be rationalised. Many exqulsite works of Van Eyck, Durer, and Holbein, were only a few inches square. Heraldic design and illumination writing and illumination were given as channels to which a student might profitably devote himself.

General decorative design was a vocation in which many had succeeded, but such design tended overmuch to wall-paper. Could not some self-reliant painter endeavour to take up the thread of decorative painting where it was left by Angelica Kauffman? The whole field of interior decoration and the curtaining and furnishing a house was one that needed new impetus now that Morris had gone. We wanted cabinet-makers of ambition, who as artists would make for themselves a style which would in turn make them. Stained glass gesso, and painting on furniture, china painting, tile painting, fan painting were referred to, and Mr. Letharby said he believed there would be a sale for such things after due time of waiting. It seemed even possible to produce table glass in a simple individual way.

Beyond the problem of employment for art school students there was the tremendously important question of the relation of the great industrial producers to the art schools and all matters of design. This question of the serious beauty of the products is too often neglected, ignored, or traversed. Too many great businesses were carried on on old reputations, to change their character, cheapen, and decline, without seemingly any effort being made to revolutionise their output by art. They often heard of an accountant being taken into a company to reorganise its finances, but who ever heard a competent designer being called in to guide manufacture since the stock example of Flaxman? Their manufacturers were extremely generous in the support of art institutions, but was not their business attitude to them largely that of "caring for none of these things?" He had no doubt that when productive forces were more equalised than they were in the last century trade was more likely to follow art than to follow missionaries in arms.

MR. GILBERT, R.A., ON SCULPTURE.

LECTURING at the Royal Academy on Monday evening, Mr. Alfred Gilbert, R.A., said the men whose lives, works, and methods he was going to speak about in his lectures were three—Donatello, Michael Angelo, and Cellini. The first of these was the harbinger of that Renaissance which produced such giants in art. Each of these three men had his prototype in ancient Greece: Donatello in Praxiteles, Michael Angelo in Phidias, and Cellini in Zeuxis. Donatello, aptly named, preceded the dawn of the Renaissance, and through his pupils inspired Michael Angelo and Cellini. Mr. Gilbert told the story of Donatello's rivalry as a student with the more advanced Brunellesco, and of his challenge to that artist. Donatello was defeated in the competition which followed, and destroyed his own efforts in despair after seeing those of Brunellesco. Donatello's conduct was an example to the Academy students, who were urged to imitate the great Florentine in his indomitable pluck and energy, and his readiness to receive criticism.

Sculpture, said Mr. Gilbert, is only a member of a great family which includes painting and architecture as well as sculpture. Sculpture has, perhaps, made less progress than either of its sister arts, but its limitations necessitate its being the most conservative of the three. Its practice demands more from the individual than either of the branches; greater sacrifices, seeing that fewer people understand it. Courage, energy, perseverance, devotion—in fact all the qualities exemplified in the lives of the men he had mentioned, were essential to its followers. A great stumbling block was the question of remuneration. Sculpture is not, and never will be, remunerative, and its votaries must be prepared to work and suffer. Painting, though of less lasting expression, is more democratic than sculpture, because it is more easily understood, and, therefore, more popular.

Mr. Gilbert said he hoped, in his second address, to enquire into some of the works of the three sculptors mentioned, and to show how they came to be executed, treating them from a practical and workmanlike point of view. The sculptor's work at that time covered many things besides modelling and bronze casting and carving, and what he had to say might be a revelation to the students as to the possibilities of their art. Enamelling was not much practiced except in small things, but he would show them what processes were used in its stead; and he would explain the method of Michael Angelo's work in marble. The idea, however, that Michael Angelo, although one of the greatest artists and workmen the world had ever seen, could chop out a statue from a block of marble, without a model, was a great mistake.

THE APOLLO THEATRE AS VIEWED BY MR. LOUIS N. PARKER.*

WHEN Mr. Lowenfeld determined to build a theatre he chose Mr. Lewen Sharp as his architect, because that gentleman had never built a theatre before; and he has invited me to undertake the equally difficult task of describing it, because I have never done such a thing in my life. The rumour that his playwrights have never had pieces performed, and his artists are all making first appearances, is, however, exaggerated.

To describe this beautiful building properly, one ought to have the pen of an Addison. The whole thing has been carried out so thoroughly in the style of the eighteenth century that the current language of to-day seems too crude to deal with its delicate perfection. The front, in Shaftesbury Avenue, reminds one of a pavilion in the park of Versailles, although at the same time it asserts itself as undoubtedly a theatre. This is a point. Some theatres look like bun-shops, and others like public-houses. In the present case even the awning over the entrance is an integral part of the architectural design, and, instead of hanging low over the heads of the waiting crowd, and depressing them even before they get into the house, it soars upwards in a bold and graceful sweep.

The problem which Mr. Lewen Sharp was faced with no doubt strikes the man in the street as a very simple one to solve. All that omnipotent personage requires is a good theatre, with easy entrances and exits, and plenty of them—of the latter especially, as he is generally much more anxious to get out than in. He wants commodious foyers, liberal opportunities for refreshments, lots of room in which to stretch his legs, and when the fit seizes him to watch a bit of the play, a comfortable seat in such a position that wherever he may be placed, he can see every inch of the stage.

In winter he wants to be warm, yet not too warm; in summer he wants to be cool, yet not too cool; and he never wants to feel insidious draughts playing round the nape of his neck, and whispering of influenza. How often has the collar of priceless fur, hastily turned up by the haughty critic, chilled an audience and damned a

* From an admirable illustrated brochure, very daintily and beautifully produced, prepared for presentation to the first-night visitors to Mr. Lowenfeld's new theatre.

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masterpiece? Very well. All this is provided for. Each part of the house has separate entrances. There are no long and intricate passages leading nowhere in particular. If, under the happy auspieces of advanced education, you have been brought up to distinguish A from B, you have only to go up a few steps, or down a few steps, and you are in your seat. To be sure, there are ten staircases in the auditorium, but you are not called upon to go up or down more than one of them; and the County Council has had a nice little nursery gate put up where it was not wanted, to prevent your falling down another one, which you will probably never go near. If Mr. Lowenfeld can surmount the difficulty of getting people into this house, the difficulty of getting them out again does not exist; they will be all out in two miuutes. There is an uninterrupted view of the whole stage from every seat. This is an assertion which the habitual playgoer will disbelieve. So did I. I made triumphantly for the end seat in the dress circle, and I am sorry to say I could see perfectly. I tried the gallery in all sorts of odd places, and again I could see. There is not even a pillar anywhere to give you an excuse for insisting on the return of your money when you have come in with an order. Why, even the busman, driving by outside, can catch a glimpse of the stage through an opening in the ground-floor foyer.

As to heating, and cooling, and ventilating, only the pen of an expert could do justice to the enormous air-shaft, or the pumps which force fresh air through it at the rate of I don't know how many million cubic feet an hour, from the roof to the basement, where it is filtered, purified, heated, or cooled, and sent as required into every tier of the house. Electric thermometers placed in all these different parts, tell the operator just where the air is too hot or too cold, and with the turn of a handle he rectifies the atmosphere in that particular spot. For instance, in a crowded house the gallery gets too hot, and then it boos. The thermometer up there goes to somewhere beyond 70 degrees; at once a corresponding bell rings in the operator's office—"Gallery too hot: just going to boo." The operator sends an imperceptible flood of cool air into the gallery, the temperature becomes normal, and the gods are glad. The main ceiling is perforated, and another air-shaft carries away the vitiated air for use by the careless citizen who has not provided himself with a seat in the house. The Apollo Theatre will soon be prescribed as a substitute for Brighton.

As for draughts they are impossible. Everywhere there are at least three doors between the audience and the street; the spaces between these doors are warmed by radiators, and there is nowhere a direct passage of air into the theatre.

Having so easily got in, and being so comfortable now we are in, we have leisure to look at the decorations. These are so beautiful in themselves that there is a grave risk we may prefer them to the play. To obviate this, Mr. Lowenfeld throws his theatre open on two afternoons a week for people who don't want to be bothered by the acting while they admire the tympanum over the stage, the balcony in the entrance hall, the ormolu fittings, the royal room with its delightful amoretti, or the other thousand and one dainty devices. All is kept the purest Louis XV. —a Louis XV. purer than Louis XV. himself could have conceived. The ceiling is a real ceiling, a part of the structure, and not merely a thing hanging down with intent to deceive the stalls and infuriate the gallery. In the pit bar and the gallery bar there are Dutch tiles which are really tiles and positively Dutch, and not washable glazed paper. In the stall foyer there is a mantelpiece carved out of ancient marble. I believe the little green bit on the left is worth a king's ransom. I know I saw a monumental mason saying his prayers to it. The effect in the interior of the house is of dead white and dull gold, relieved by red draperies; and in these draperies are woven everywhere the mystic flying lizard supported by two lions rampant. These pleasing heraldic beasts are a token of the blessing bestowed upon the theatre by the gomna gipsies—a tribe of Bohemians closely connected with Mr. Lowenfeld's ancestral estates in Austrian Poland. When they heard he was going to build a theatre they sent him the original badge of their tribe for luck, together with the prayer that he would adopt their coat-of-arms for the building. He does more: he produces "The Belle of Bohemia."

The orchestra is a free adaptation of Wagner's Bayreuth orchestra, with several alterations of Mr. Lowenfeld's own inventions, calculated to increase the resonance. The instrumentalists are sunk out of sight, and are ranged much after the Bayreuth manner; but the conductor remains in view of the audience. This I regret. I hold that the audience does not want to see the conductor any more than it wants to see the prompter, the limelight man, the author, or some actors. I should not be surprised if Mr. Lowenfeld ultimately takes his courage in both hands and suppresses the conductor.

The lighting of the house is confined throughout to electricity, and in order to obviate a failure of supply, two separate systems of wiring are furnished by two distinct companies. Each system is subdivided into two circuits, so that there are four securities against breakdown.

The stage is as full of novelties as the auditorium. Everywhere there are contrivances for saving labour, for curtailing the intervals between acts, and for increasing illusion. One man can raise or lower the heaviest cloth with one hand without an effort. I have done it myself. There are no fly-rails, but, instead, a gallery eight feet above the stage, where the entire mechanism is concentrated and worked. A very interesting experiment in lighting is the arrangement of electric limes thrown from between the boxes on the stall and dress-circle tiers on a level with the faces of the actors. These are intended to remove the curious shadows produced by ordinary stage lighting whereby artists are frequently made extraordinarily less good looking on the stage than off.

And then there is a spacious green room behind the stage, and there are twenty-three dressing-rooms in a separate building, with five on a level with the prompt entrance, so that Mr. Lowenfeld can positively have five leading ladies in one piece (if he can find them) without fearing a quarrel; and there is a large rehearsal room; and there is a dramatic and vocal school with class rooms; and there is a prompter's library, where all the rejected manuscripts will be kept; and there is a reception room where the mothers of the leading ladies will sit and sew; and, in short, what is there not that can conceivably go to the making of one of the lordliest and loveliest pleasure-houses of Europe?

FOR THE BETTER PRESERVATION OF STONEHENGE.

SOME admirable suggestions for the better preservation of Stonehenge are sent by Mr. W. M. Flinders Petrie, the eminent archæologist, to the *Times*. Writing from Arabah, Baliana, Upper Egypt, under date February 7th, he says:—

"As probably I have spent more time than any one else in accurate work at Stonehenge, I should be glad to state some considerations regarding its future.

"1. Artistically.—To do anything to break the marvellous effect of the lonely plain and great masses of stone would be cruel. The sight is the most impressive in England, and on no account should it be destroyed by a hideous iron railing, such as now defaces Kits Coty house. If a fence were necessary, a sunk ha-ha would be the only form permissible. But no rapid injury can be done by visitors, and a fence is needless if there is a guardian.

"We have to thank the successive owners for guarding the monument so far; but the public might surely provide a guard to live near by, in a cottage hidden by earth-banks, so as not to spoil the surroundings. This would be far the best course for the future.

"2. For Conservation.—To trim up the place, by re-erecting every stone that has fallen, would be no benefit either to its appearance or to archæology. A few stones that have fallen since accurate plans have been made might be fairly replaced within two or three inches. But the real effort should be to save those now gradually yielding over, especially the largest stone of all. When leaning stones have been pushed up into place, then all the unstable ones should have a concrete bed filled in, below the turf level, as I proposed 20 years ago. The whole soil under a stone might be removed while the block was clamped in a timber frame.

"3. For history.—While needful repairs are being made a most important chance of historical research would be

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open to us, and possibly a thorough exploration might be made at the time. There are some rules essential to success in such a work. (1) Not a handful of soil must be moved except under the instant inspection of a good archæologist, who must live in a shed at the site. There must be no fooling about, driving up each day from an hotel at Salisbury, to find out that the workmen have wiped out historical evidences before breakfast. (2) The workmen must be trained hands, and full local value must be paid to them for everything they find; there must be no chance tales a year or two later about so-and-so having got prizes from the excavations. (3) A perfect record of every scrap, even of pottery, must be kept, and the ground cut away in such measured slices that the place of every object is known to an inch. (4) The public must be kept out from all interference from the portion being worked, and no festive luncheons and notabilities must be allowed to distract the recorder for a moment.

"We have here the chance (thanks to the conservation by the owners) of reaping a fine harvest of historical facts and clearing up our early civilisation better than anywhere else. Every item is of irreplaceable value and no carelessness or clumsiness over such work can be tolerated. Being at a distance, I am not aware if any specific person or scheme for the work has yet been brought forward; and these remarks must be taken as purely dictated by the seriousness of the subject, and not as reflecting on any arrangements in view. Perhaps during the summer I may be able from University College to co-operate in some plan. For the present I am in the midst of restoring the beginnings of an older civilisation, of the first and second dynasties of Egypt."

SHEFFIELD SOCIETY OF ARCHITECTS AND SURVEYORS.

AT a meeting of the Sheffield Society of Architects and Surveyors held on the 15th inst., the President, Mr. Joseph Smith, in the chair, the winners of prizes in the competition promoted by the society for measured drawings of old buildings in the neighbourhood of Shffield were announced. Mr. H. W. Inott won the society's prize of three guineas, and the president's prize of five guineas: Mr. J. Miller the second prize of two guineas, and Mr. E. R. Bower's drawing was highly commended. The drawings will be displayed in the Montgomery Hall at an early date.

It was unanimously decided to forward an Address of Condolence to King Edward VII. in the name of the society.

Mr. H. H. Statham, editor of the *Builder*, afterwards gave an interesting lecture on "Our Cathedral Fronts: a Comparative Criticism." He described the different characteristics of the west fronts of most of our English cathedrals, showing by limelight illustrations and drawings Lichfield, York, Lincoln, Peterbro', Ely, Winchester, Westminster, Wells, St. Paul's, Worcester, and many others. He described the French and Italian types of fronts, and critically examined the strength and weakness of the design in each case.

A vote of thanks was accorded to the lecturer, on the motion of Mr. Gibbs, seconded by Mr. Withers, and supported by Mr. Wigfull, Mr. H. L. Paterson, Mr. T. H. Waterhouse, Mr. Fenton, and the President.

THE CONSTRUCTION OF LUNATIC ASYLUMS.

MR. GEORGE T. HINE read a paper on this subject at the Royal Institute of British Architects on Monday evening last, the 18th inst.

Mr. Hine, at the outset, said that asylum construction embraced the study of almost every description of building, from a church to a cowshed, and the art of combining so many dissimilar structures into one harmonious whole, with the engineering skill necessary to provide for and supply heat, light, and water to what is practically a little town, made asylum architecture an almost distinct profession in itself. Further, asylums are built for people who have to be watched, nursed, and provided with employment and recreation under conditions inapplicable to sane people, and to provide for all these, while the subjects are under enforced detention, a very special knowledge is required to make their lives bearable, and, as far as possible, pleasurable. In order to make his paper of some use to the student of this branch of architecture, he proposed dealing chiefly with asylums at home and their most fitting form of planning, and referring to some of the most interesting examples in foreign countries.

Starting with a brief historical sketch of the building of public asylums, the author stated that there was no certain evidence of asylums for the insane before the Middle Ages. Early in the fifteenth century there is record of a most sumptuous building erected in Cairo for the exclusive use of lunatics. In 1641 the asylum of Notre Dame de la Paix, at Charenton, was founded for the reception of lunatics, and is now one of the largest of such institutions in France. In 1660, in the Hotel Dieu at Paris, two small wards were set apart for the mentally afflicted. Gheel, in Belgium, has been a resort for lunatics for many centuries. Here patients were brought to be cured, boarding with the peasants of the district, and from this has gradually developed a colony of resident lunatics, numbering to-day nearly 2,000, who, while still chiefly boarding with the inhabitants of the place, are under a strict code of regulations framed by the Government. In England there are records of an asylum for the insane at Barking, founded in 1370. Bethlem Hospital was founded in 1247, but it was not till 1403 that we have any record of lunatics being received there. Of other early buildings of the kind in this country were St. Peter's Hospital at Bristol, founded in 1699; the Manchester Royal Lunatic Hospital in 1706; Bethel Hospital, Norwich, in 1713; St. Luke's Asylum, London, in 1751; and the Liverpool Lunatic Hospital in 1792.

Up to the end of the 18th century such lunatics as were not at large were confined in prisons or in the few houses then erected for their accommodation, and were frequently treated worse than felons, often with the greatest cruelty. But in the year 1796 the "Retreat" at York was founded by the Society of "Friends," an institution where an intelligent system of treatment was initiated and carried out under the able direction of Mr. William Tuke. This institution and the novelty of its treatment constitute a landmark in the history of lunacy. It roused a spirit of inquiry into the housing and care of the insane, which resulted in the passing of an Act in 1818 permitting county justices to erect asylums for the accommodation and treatment of pauper lunatics. In 1845 another Act was passed, making it compulsory on local authorities to provide asylums for the insane in boroughs and counties throughout England and Wales. The Act established the present Lunacy Commission with six paid Commissioners, whose work of inspection and direction has done so much to ameliorate the condition of the unfortunate people under their care. In 1845 there were only about thirty pauper asylums and hospitals, the latter chiefly for private patients, besides a number of registered houses, and, as nearly as could then be estimated, about 17,000 pauper lunatics in England and Wales. Now (in 1901) there are no fewer than 100 county and borough asylums and hospitals, together with something like seventy registered houses, all of which have to be inspected once—in some cases four times—a year, 107,000 certificated lunatics to be interviewed by the Commissioners. Scotland and Ireland have also their separate Acts relating to lunacy—in Scotland on somewhat similar lines to those in this country, with a Board of Commissioners; but in Ireland the construction and direction of asylums are more directly controlled by the State.

Turning to the actual buildings, the author describes some of the most notable erections since the Act of 1845, indicating the various stages in the evolution of asylum planning, a study of which is essential to a proper appreciation of its latest developments. Existing types of plan are all more or less developments of the corridor and pavilion systems. In the early days the corridor system, consisting of a long gallery, with single rooms opening out of it, was the only recognised principle on which an asylum could be built. The form was usually quadrilateral. After the Act of 1845, while the internal arrangements savoured less of restraint, the principle of the corridor system still prevailed. The first development was an attempt at classification by the introduction of a ward for the sick

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and infirm on each side of the building; the number of cells was reduced and more patients were allowed to sleep in associated dormitories. In the seventies special provision began to be made for epileptics, and the Lunacy Commissioners in 1874 published a plan designed by Mr. Howell for an epileptic ward, which has been adopted with trifling variations in nearly every asylum designed within the last twenty years. In the decade 1871-80 the most notable departure in planning is met with in the Lancashire County Asylum, at Whittingham, designed in what Burdett describes as the corridor-pavilion style, and characterises as one of the finest specimens of asylum architecture in England. The Gloucestershire second county asylum, erected on the pavilion system, the blocks being arranged in echelon, was the first of this type erected in England, and may be said to have originated the oblique or broad-arrow form of corridor now so commonly adopted in asylum designs. The Surrey second county asylum at Cane Hill, one of Mr. Howell's chief works, and accommodating 2,000 patients, is on the pavilion type, the blocks radiating from a main corridor of horse-shoe form. Criticising the variation of floor levels in this building, which necessitated flights of steps in the corridor, the author was of opinion that this irregularity could have been avoided by a more careful consideration of the surface levels of the ground, and a little more excavating. He urged architects designing asylums to give a first consideration to the site. In many of the plans coming under his official notice the buildings are generally left to adapt themselves to a site rather than the site being adapted to the buildings. Describing the Claybury Asylum, designed by himself, the problem to be solved was how to accommodate 2,000 patients within reasonable distance of the administrative centre without prejudice to the position and aspect of their wards. The plan he adopted was a modification of the echelon type, the wards being approached from obtusely oblique corridors, the pavilion system being almost a necessity from the conditions issued. The asylum is built on the top of a hill, falling all ways, and by removing the apex of the mound, representing nearly 100,000 yards of soil, which was well disposed of in filling up a valley to the north of the asylum, a level plateau was obtained, sufficient to allow of about half the patients' blocks and the whole of the administrative department being erected at one uniform level; the remaining wards being slightly lower, but in no case more than 5 ft. below the central buildings. At Bexley Asylum the author first introduced the villa system on a tentative scale of three villas holding 35 patients each, and a detached hospital for 50 phthisical cases or others requiring isolated treatment. In this asylum, which accommodates 2,000 patients, all the wards communicate with one another, and an officer may pass from one end of the male or female side to the other without retracing his footsteps or being obliged to return to the main corridor. Bexley has proved so satisfactory that the London Asylums Committee have arranged with Mr. Hine to use the same plans, with a few modifications and improvements, for a second edition of this asylum at Horton.

Numerous other asylums were referred to, the author indicating their distinctive features, and in many cases exhibiting plans.

(*To be continued.*)

TRADE NOTES.

AN illustrated trade catalogue of more than usual interest is that which has just lately been issued by Messrs. Lockerbie & Wilkinson, Limited, of Birmingham, London, and Glasgow. This firm are in the very front rank of brass founders in the country, and in this catalogue are admirably represented a large variety of the immense range of goods manufactured by them. Door and window fittings of every description; mantels, grates and grate furniture in wood, iron, copper, and brass; meat market and slaughter-house fittings; constructional ironwork; general ironmongery; greenhouses; special tubular ball-bearing fittings for sliding doors; acetylene gas generators and other classes of goods too numerous to particularise are all more or less indicated and illustrated in this catalogue. Everything is carefully priced in various sizes and different materials so as to give every facility to architects in specifying goods. This is in all respects a thoroughly useful, as well as artistically produced catalogue. Messrs. Lockerbie and Wilkinson have a London office at 109, Victoria Street, Westminster, Mr. Laurence Weaver being their London representative.

MESSRS. COUSLAND & MACKAY, ventilating engineers, Glasgow and Manchester, advise us that they have completed their arrangements for the extension of their business to Australia. They are establishing an agency in Sydney to push the sale of their well-known Mackay's patent ventilators and fans. A member of their English engineering staff sails at once to take personal supervision of the department immediately on his arrival. Messrs. Cousland & Mackay have also been entrusted with the ventilating of the new offices which the Midland Railway Company are about to erect at Derby. This they will effect by means of their patent direct-acting ventilators, a number of them being of large size and ornamental in design.

JOTTINGS.

PLANS for a new theatre at Ayr, to be erected by Messrs. Pierce & Bolton at the Carrick Oval, have just been passed by the Dean of Guild Court.

A NEW Childrens' Infirmary for Liverpool is proposed. The cost is estimated at some £50,000, and we understand Mr. T. W. Cutler, F.R.I.B.A., of London, has prepared the designs.

THE Rotherham Town Council have been invited by Earl Scarborough to support him in his opposition to the North-Eastern Railway Bill, which he points out will, if passed, cause serious interference with the precincts and scenery of the Roche Abbey grounds.

THE London and North-Western Railway Company's scheme to construct additional dock works at Garston will, it is estimated, be carried out at a total cost of £450,183, of which the actual dock works will require £37,795, and the "cut" or channel in front of Garston Docks a further sum of £72,388. The proposed dock will occupy a site mainly upon land already owned by the Railway Company, and partly upon the foreshore of the estuary of the River Mersey, and will cover an area of some 500 yards by 600 yards. It is expected to occupy some seven years in construction.

A PAPER on "The Planning and Design of Churches" was read before the Leeds and Yorkshire Architectural Society on Monday evening last, by Mr. H. C. Corlette, of London. Mr. Corlette dealt chiefly with those things that affect the plan of a church—the sanctuary, the choir, the nave, the side chapel, and the vestries. He gave suggestions as to how the site at the architect's disposal should be utilised to the full, how the surroundings should be taken into consideration when determining the design; and insisted that while the personal element should enter into the architect's work, it would yet be mere vulgar rudeness to force it unduly upon the notice of all who looked on it.

THE King, it will be remembered, recently suggested that a committee composed of members of the present and late Governments should consider the question of a memorial to Queen Victoria. The following gentlemen have consented to act as members of the first committee:—Lord Salisbury, Lord Balfour of Burleigh, Mr. A. J. Balfour, Lord Cadogan, Mr. Chamberlain, Mr. Akers Douglas, Lord George Hamilton, Lord Rosebery, Sir H. Campbell-Bannerman, Sir Henry Fowler, Lord Kimberley, Lord Mayor of London, with Sir Arthur Bigge as secretary. The committee held its first meeting on Tuesday evening. The proceedings were strictly private, but it was ascertained that the joint committee had decided to submit to the King, through Sir Arthur Bigge, a report of its preliminary deliberations, that an executive committee is likely to be appointed, and that a further conference will probably be held in the course of a few days.

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The British Architect.

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ARCHITECTURE AND THE ROYAL ACADEMY.

IN a month's time architects who intend exhibiting at this year's Royal Academy Exhibition will have sent in their drawings. We believe there are still left a number of people—architects included—who regard the Royal Academy as the final tribunal of all that is worthy in art. To be hung at one of its exhibitions, even sky-high or low down, is the hall-mark of merit; to be admitted a member of the Academy itself is to reach the pinnacle of artistic ambition and fame. That there is a good deal of real merit—and very superlative merit too—which is never assessed by the verdict of the Royal Academy; and that there are many truly great artists who have never secured admission within the sacred circle of Academy membership, is a little bit of fact that can be conveniently forgotten or ignored if desired. But there is balm in the thought, at any rate, for those who are to be counted amongst the crowd of rejecteds year by year. In fact the very narrowness of the Royal Academy, alike in its constitution and its attitude towards the art and artists of to-day, inevitably prevents its becoming in any broad, true sense of the word a final tribunal of artistic merit.

Indeed, one has only to see how architects and sculptors are treated in relation to the sister art of painting to discover at least one great inherent weakness—a weakness not so much of method or procedure, as of fundamental principle. Nor does there seem much probability of this weakness being remedied. Only last week, in the House of Commons, the First Lord of the Treasury was asked whether, having regard to the present constitution of the Royal Academy and the increase in the number of British sculptors, architects, and artists (other than painters) since its foundation, the Government would recommend the appointment of a Royal Commission to inquire into the administration of that body with a view to its reorganisation, and with the object of augmenting the number of corporate members drawn from the sculptors, architects, and artists of the nation. In reply to this Mr. Balfour said that no information had been brought to his notice, or, so far as he knew, to that of any other member of the Government which would seem to justify, or render necessary, the appointment of such a Commission. So that we may take it that any reform at Burlington House in this direction is not likely to be entertained just yet awhile, although it is one of the most pressingly important in our opinion. For, as at present constituted, the Royal Academy simply represents painting—or as much of it as it thinks fit—and it admits architecture and sculpture as mere accessories, whilst decorative art, pure and simple, is scarcely recognised at all.

How far this disproportionate representation of architecture in the membership of the R.A. affects the question of an adequate and representative exhibition of the best architecture of the year at the annual Academy Exhibition it would possibly be difficult to gauge. But the fact remains that the display of architecture is not usually anything like as representative of the best modern work as it might, or ought to be. Even with the limited space allotted to architectural designs a much higher level of quality might easily be reached. One has only to compare the rejections with the work hung on the walls to see the possibility of this for oneself. Every year really good work is rejected. Why? Not to make room for better, for there are many hung that ought to be consigned to the "black hole" of the Academy. There are years, of course, when the percentage of inferior or bad work shown is less than others, a fact that surely goes to prove that something does, after all, depend upon the hangers, and not all upon the sizeable fitness of the drawings. Funny stories are often told of the hanging of paintings, and it would be interesting if the architectural hangmen of the R.A. would give us their experiences. We should be quite prepared to learn that a number, at any rate, of the works hung were chosen simply because they filled an awkward blank, and that mere sizeableness counted for something in dealing with odd corners and spaces. All the same, we should be by no means convinced that it was not easily possible to materially raise the general standard of excellence by a more discriminating and careful judgment of the works passed before the hangers. It would be difficult to advance good and sufficient reasons for the presence of many works on the walls of the R.A. architectural gallery; it would be still more difficult to discover any solid argument for including them at the expense of other and better works.

There ought to be—possibly there are—certain well-defined principles of selection to be followed. The first broad principle clearly should be the representation as far as it may be anyhow practicable of the really best architecture of the year, and not a mere representation of architects spread over as large an area of the country as possible. Then, undoubtedly preference should be given to designs that have been, or will be executed, provided always that they possess distinctive architectural merit. But we certainly do not think a poor design in this category should oust a superior design which has been submitted in a competition or for a *bona fide* job, but for some reason or other has not been, or cannot be, carried out. Sometimes these designs are far more interesting as solutions of practical problems in designs than those exhibited of executed works, and this point is worthy of consideration. Again, it is a questionable policy to allow too much of the limited space on the walls to be monopolised by one particular architect. This is a matter that perhaps needs courageous as well as judicious handling on the part of the hangers. A more debatable point is, perhaps, the admission of more or less pictorial representations of old work. There are some reformers who would rigidly exclude all these. We do not incline to any hard and fast rule in regard thereto, but unquestionably modern design has the first claim upon the space at the hangers' disposal, though here again it must be in some real architectural sense of the word worthy of its place on the walls. We have seen numbers of drawings of old work which, in view of the modern architectural designs we have known to have been rejected, might well have been relegated to the black and white room, or passed over altogether.

There are other points which might be touched upon, but, after all, it is rather the broad principle of making the architectural gallery at the Royal Academy a really representative exhibition of the best current examples of architectural design that we would insist upon. It is, perhaps, one of the most disheartening features of this annual show—the one architectural show of the year—that good work is constantly rejected to make room for that which is inferior or altogether bad. We know that the hangers have a difficult task at the best of times, and always a more or less thankless one. To charge them with favouritism in regard to this, that, or the other architect would be manifestly absurd, and yet we are most of us aware that there are men who have never known what it was not to have a design accepted, whilst others have, apparently, been as systematically rejected. To please everyone would be an impossibility, but it should, at any rate, not have to be said that good work was rejected for bad, or that the exhibition was unrepresentative of the best work sent in. Probably, if the hanging were left entirely in the hands of the architect-members of the Academy, we should hear less complaints than we do, and the whole thing would right itself. Numerically, however, these members are not able to press for any measure of reform that the Academy as a body does not care to approve or adopt. Otherwise we might ask that the selection of architectural works should be left entirely to the architect-members, who should of themselves constitute the hanging committee so far as architecture was concerned. But this, we are afraid, is still a far-off reform.

What, perhaps, makes one all the more desirous that some reform should come is that the Royal Academy Exhibition is the only place where English architecture can be seen and studied. Those who, like ourselves, have visited the architectural gallery at the Academy year after year, for a good many years past, have found it really an

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education in the development and progress of modern English architecture. As we have already said, it is the only architectural show of the year, and, in spite of all its shortcomings, it is the goal of most architects' ambitions, if only for the sake of the honourable advertisement thus obtained. The Royal Academy, however much disappointed artists may rail against it, is, after all, the one Academy of British Art. It has ignored some great artists, it is true, but it has included many more than it has overlooked. And to-day we do not know any architects who would not consider membership with the Royal Academy the one great culminating honour to their work and themselves. Shall we venture to suggest that possibly it is because the honour cannot be obtained by the passing of an examination, or the acquirement of a certain professional status, but is entirely the arbitrary gift of a limited number of artists of the first rank? With all its faults the Royal Academy is the beacon light of fame to every artist, be he painter, sculptor, or architect. And it is a certain fact that if it is to be reformed that reform must be initiated within itself; outsiders can but urge the need and suggest the remedies. This we must not cease to do.

RUSKIN DRAWINGS IN PALL MALL.

VERY nearly a year ago I attempted, in the *British Architect*, to reply to various remarks made by Mr. H. H. Statham at different times, but especially in an article in the *Fortnightly* for March, 1900. I do not mean to take up the question again, but in the exhibition of drawings and studies by Ruskin in Pall Mall, which closes to-morrow (Saturday), I found something which gave an insight into the artist's method of dealing with architecture—a collection of pictures which will show more than any discussion by words Ruskin's attitude towards old buildings.

To begin with, the exhibition must be one of the most unique that has been held in London for some time—and barely half a dozen persons entered the room during my hour at the gallery of the Royal Water-colour Society! Not one of the 400 odd items was ever intended for exhibition; each is a study of some particular aspect of a building, or a view of a mountain range, a market square, or Venetian façade. Each one was done just for the pleasure and joy of translating the actual thing on to paper by pencil and colour, and yet each is worthy of its place in the collection; and it is all the work of a man who was versed in almost everything—in Greek art and Christian art, in classic mythology and mediæval fable, in geology and botany; and through all this ran one fixed creed—a love of Nature. Ruskin derived "laws" from everything he saw, from the smallest leaf to the form of a mountain side, and he saw the same laws exemplified in a single crystal as in the mountain whence it came.

To find out the love of architecture that *can* be expressed it is only necessary to look at these drawings. Apart from the wonderful handling of perspective seen in the panoramas on the Venetian canals, look at the rendering of the old churches and palaces of Venice, the soft marble walls and columns rising out of the then clear canals of Venice.

Look at these with their almost speaking reflections in the green water, rendered in water-colour that can only be called supreme. If they charm an artist they must astonish an architect with any artistic sense, and who has never seen such before. No. 46 shows a piece of architecture in Venice. It is merely a plain end of a church on the canal—a dull chrome wall, but heightened into splendour by a little door surrounded by marble mouldings; the colouring is most vivid and intense, and all seems to be toned down to the edge of the water, where it begins to re-assert itself. Such a piece of colour expression it would be hard to beat, even if one looked for it among Turner's drawings.

The buildings Ruskin loved so well were studied by him as it seems buildings should be studied. And when we see the studies of St. Mark's, and its mosaics, and of the Ducal Palace, one is able to understand why he loved these buildings so dearly. He drew and painted marble as Nature made it—not hard white Pentelican marble of the Parthenon, but soft coloured southern marbles—veined with purple and green, and Byzantine capitals fashioned into a network of Eastern fancy. Ruskin was afraid of nothing, and whatever expressed itself in the stone, either by form or colouring, he transferred to his sketch book to delight himself, or to clear up some point he was anxious to explain. And this is the work which charms us to-day.

I have spoken of his wonderful perspective, and it is never more apparent than in the large drawings of market squares like No. 6 at Abbeville. I can hardly criticise, for when this brief note appears the exhibition will only have one day to run, and many will doubtless afterwards be sorry they failed to visit it. But I will say that if this shows the influence of Prout, as it undoubtedly does in the *lining*, it shows much more of Ruskin himself in the grouping of the whole square, where every house seems complete and in its place, and *only* place, and the Gothic cathedral rises up behind nowise injured in beauty by the humble dwellings below.

Then there are many sketches which must have been taken from most extraordinary and risky positions, where we can fancy the form of the Professor clinging to a buttress or groping on a cornice in order to get at some particular moulding or architectural "bit"; these are perhaps the most delightful.

All the drawings of St. Mark's are sublime, and Venice seems to live again in these sketch-book pages overflowing with colour and line. In Rome it is the same. In No. 129 (Sta Maria del Pianto) we see all the squalid life of the modern Italian, with the lines of clothes hanging out on the buildings, stretched from window to window, their dark shadows cast on to the wall by an Italian sun. In everything he portrayed Ruskin seemed to get the right spirit of the thing, and a drawing made by him at Venice, at Rome, at Rouen, or at Peterborough, each took something of the atmosphere of the surroundings, and with it a glimpse into the national life. (See also 257, The Forum, at Pompeii, which shows how archæological he could be.) This is what makes Ruskin's architectural drawings of so great a value, and also at the same time so great a charm to a sensitive nature.

I should like this note to be taken as a supplement to my former article, as I think it shows more plainly that Ruskin can claim to have got at the bottom of the meaning of architecture for human beings—not, perhaps, for those professional "architects" who only think about classic proportions, nor for the restorer; but for he, who, while recognising the beauty of Greek architecture, cannot content himself with the mere handing down of classic design, but sees in the endless variation of Gothic art the real expression of man's pleasure in his existence and his work.

MAX JUDGE.

NOTES ON CURRENT EVENTS.

THE address to the R.I.B.A. students, prepared by Mr. William Emerson, the President of the Institute, and read at Monday night's Institute meeting by Mr. W. J. Locke, the secretary, was full of sound practical advice, Mr. Emerson urged the need for greater attention to education and educational methods. He strongly pleaded for the cultivation of more methodical ways in education as well as in business, remarking that, never having been brought up with such habits, he had learned the great necessity of them, particularly to the architect. Therefore his advice to students was, "Cultivate earnestly methodical habits." The development of a higher education and a more thorough practical training Mr. Emerson also suggested, as one of the most essential needs of the present time. To such development he looks for the raising of the architect's professional status. Mr. Emerson also indicated in his remarks the value and meaning of proportion in architecture not only in the mass, but in detail, colour, and sculptured and other decorations. So also he urged there should be proper proportion maintained between artistic sentiment and practical purpose. "The man who sacrifices the purpose to the art is not a useful member of the community, whilst he who sacrifices his art altogether to utility does not elevate the community. It is the correct judgment weighing the proportionate values of the one and the other which makes the architect." In his concluding

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remarks, the President alluded to the importance of making right principle the basis of all action. In architecture this would, he pointed out, mean the avoidance of shams and false construction. "Truth makes work look consistent and correct; lack of it offends good taste." Then, of course, "the highest principles of morality should be the guide in professional practice," not only in regard to art, but also in all dealings with employers, contractors, tradesmen, craftsmen, and others with whom the architect has business relations.

SOME magnificent specimens of pianoforte manufacture are at present on view at Messrs. John Broadwood & Sons, which no one interested in this branch of art should on any account miss seeing. Prominent in interest is the Jacobean design by Mr. E. L. Lutyens, which was exhibited in the English Royal Pavilion at the Paris Exhibition, and awarded the Grand Prix. Though there is nothing heroical about the design of this fine instrument, it is difficult to imagine a frame which would better architecturally accord with the design and furnishing of a room than this refined and pleasing case. Instead of elaborate carving and inlay the framework is made up of simple, nicely-proportioned panelling, and it is all built in square lines, there being no curved sides or angles anywhere. As a contrast to the squareness of all the upper part, the legs are connected by curved rails with flatly splayed mouldings, which give an excellent effect of light and shade. A striking feature of the design is the hammered iron desk with bright finish, and the pedals, which are daintily supported by twisted and moulder balusters, all in bright iron, instead of the usual lyre arrangement. A very fine piece of work is Mr. A. C. Blomfield's Georgian design with pilaster legs and inscriptions. The "architecturalness" of this piece is very marked. Other clever designs are the upright grand in an oak case designed by Mr. William Flockhart, two upright pianos by Mr. Baillie-Scott, and a fine drawing-room grand designed by Mr. George Henschel. This by no means exhausts the interest in the exhibits displayed in Messrs. Broadwood's showrooms, which constitute one of the finest exhibitions of pianos we have seen.

IN the competition for new police station and library buildings, to be erected in Denbury Road, Leeds, we are informed that the designs submitted by Messrs. Bedford and Kitson, Mr. H. Ascough Chapman, and Messrs. W. Hanstock & Son, were judged by the assessor to be of equal merit, and the premiums of £25, £15, and £10 have therefore been added together and equally divided between them.

WE understand that Mr. Lewen Sharp, the architect for the new Apollo Theatre, is a Progressive candidate for the London County Council.

MR. W. D. CARÖE, M.A., has been appointed architect to the Canterbury Cathedral in succession to the late Sir A. W. Blomfield.

THE death is announced at Edinburgh of Mr. G. W. Johnston, R.S.A., R.S.W. Mr. Johnston, as a painter, devoted all his resources to Scottish landscape, and at the outset of his career he painted much in the Trossachs and afterwards in the Borderland. Amongst his best-known pictures was "When the burnie runs into the sea."

WE understand that the guardians of the Chelsea Union have instructed Mr. Charles E. Gritton, A.M.Inst.C.E., of London and Selhurst, to prepare a scheme for the drainage of Chelsea Workhouse, to be submitted to the Local Government Board for their approval.

THE third winter meeting of the Diocesan Architectural and Archæological Society was held at Worcester, last week, when Mr. J. Willis Bund delivered an interesting address on "Alien Religious Houses in Worcestershire." Dealing more particularly with Deerhurst, Astley, and Wootton Wawen, and with the great Norman abbeys with which they were connected, Mr. Bund said it was a matter which required consideration how far these houses were places where enemies of the county collected—nests of traitors. On the other hand, they probably brought a higher standard of worship, and certainly had a civilising and refining influence on the life of the county. A discussion followed, and a hearty vote of thanks was passed to Mr. Willis Bund.

THE members of the Devon and Exeter Architectural Society met at the Exeter Athenæum on Friday evening last, to hear a description of a tour on the Continent by Mr. Charles Cole, which was illustrated by limelight views. The lecturer took his audience from Harwich to the Hook of Holland, thence, via Rotterdam, Nymingen, and Cranigen, the German Frontier Station, and so on, to Cologne, from thence in the Rhine Valley to Remagen, describing the scenery and the condition of houses in course of erection. From Remagen, visits were paid to Coblentz, Cologne, Konigswinter, the valley of the Ahr, Boun, Munster, Boppard, and finally the little village of Espel, across the Rhine, opposite Remagen.

A LECTURE on "Optical Refinements in Classic and Mediæval Architecture" was delivered before the members of the Architectural Association of Ireland on the 22nd ult., by Mr. George Coffey. Mr. Coffey, by means of numerous very excellent lantern slides, illustrated the methods the old master architects had of overcoming optical difficulties and the subtle inaccuracies they apparently purposely committed to gain effect, in which, as numerous old buildings show, they were eminently successful. Examples of these optical refinements were shown, from the Parthenon of the Greeks, from Pisa and Sienna Cathedrals the most beautiful specimens of Italian and Romanesque and Eleventh Century work, and among many other examples, some arcading from Cormac's Chapel at Cashel, where the same peculiar inaccuracies occur. A cordial vote of thanks was passed to Mr. Coffey for his interesting lecture.

OLD MIDDLETON HALL, situated on the extreme edge of the County of Warwick, on the high road between Coleshill and Tamworth, was the subject of a lecture the other evening at a meeting of the Birmingham Archæological Society. The old hall was a notable residence for a period considerably earlier than the Norman Conquest. The lecturer, Mr. De Hamel, with the aid of lantern views, described the place in detail, pointing out many objects of interest to the antiquarian. Middleton Hall possesses an ancient chapel, views of which were shown, and at one time maintained its own private priest. Pictures of the old mill were also thrown upon the screen, and the lecturer remarked that it was one of the oldest mills in the country, the internal arrangements being just as they always were; there was nothing modern about it. Many curious things concerning the old hall and its occupants were told by Mr. De Hamel, and the views, which were remarkably clear, included pictures of the ancient Tamworth Castle, and other interesting scenes in the neighbourhood.

THE addition of a statue of the late Queen Victoria to the statues of London inspires the ubiquitous calculator of the daily press to point out that there are 31 statues to royalties in London; 14 of statesmen, and nearly as many of soldiers; 12 of philanthropists; half-a-dozen of literary men; and only one of a musician.

THE approaching destruction of New Inn, which lies between Wych Street, Strand, and Clare Market, and is to be absorbed by the improvements between the Strand and Holborn, recalls the fact that this Chancery Inn dates from 1500, when it obtained a lease of its present land from Sir John Furneaux, the then Chief Justice of the Common Pleas.

AN "old master" has ended its career in a Berlin auction room. The picture (the *Express* correspondent tells us) was the "Virgin," said to be painted by Raphael in 1510, and bought by Professor Louis Nicole in 1885 from Mueller, of Wiesbaden, who afterwards lent the purchaser a sum of £2,500 upon it. Art critics were agreed as to its genuineness, and it is said that the late Mr. Vanderbilt was desirous of buying the picture for £60,000, but died before the purchase was completed. At the sale the

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picture was known to be a sham, and Herr Mueller, amid general laughter, bought the picture for £300.

THE National Society for Checking the Abuses of Public Advertising, last week end, held a meeting, at which the following resolutions were put *seriatim* and passed unanimously:—"(1) That this meeting respectfully invites the Government to consider the expediency of imposing a tax on exposed advertisements, either for the purposes of the Imperial revenue, or as a source of municipal income; (2) that this meeting respectfully invites the Government either to give facilities for the consideration of the Advertisements (By-Laws) Bill prepared by the society for checking the abuses of public advertising, or to introduce a measure giving local representative bodies power of control over all forms of out-of-door advertising; (3) that this meeting commends to the support of all members of Parliament the clauses in private Bills promoted by the Town Council of Dover, the Corporation of Chesterfield, and other municipalities, by which powers of control over advertising display are sought; (4) that this meeting urges upon all who are interested in maintaining dignity and beauty of aspect in London the duty of securing for the proposals of the society the favourable consideration of candidates at the approaching elections for the County Council; (5) that this meeting, while regarding with satisfaction the advance that has been made on the general lines of the society's action, believes that much advantage would result from the better organisation of strictly local effort for the diminution of local disfigurements."

A VERY useful little treatise is Mr. W. J. Dibdin's "Lime, Mortar and Cement" (London: The Sanitary Publishing Company, Limited). It deals with the character and chemical composition of the various materials used in making mortars and cements, and the methods and results of their chemical analysis, and it "has been compiled to meet the requirements of those who in the course of their technical experience, have hitherto been at a loss where to look for guidance." An account of the various limes is given, and the various kinds of clay and sand and their substitutes are also fully dealt with. The various theories as to the cause of the setting of mortar and cement are also discussed and some general suggestions made for further consideration. The analytical question and the chemical and physical factors of the problem are fully dealt with, whilst the mechanical tests for cements in particular are fully described. The author has also summarised the R.I.B.A. experiments on brickwork which were, as our readers know, undertaken not so very long ago. The subjects of the fourteen chapters contained in the book are:—Characteristics of various limes; clay; sand and its substitutes; mortar and cement; the setting of mortars and cements; rough technical tests of mortar without chemical analysis; the chemical analysis of lime, mortar, cement, etc.; typical analyses of mortar and cement; mechanical tests of cement; the adulteration of Portland cement; the strength of brickwork; concrete; artificial stone; asphalt. We recommend this book not only as an excellent text book for students, but also as a practical treatise for practical men.

"A PRACTICAL Treatise upon Steam Heating," by Frederick Dye, M.R.I., has just been published by Messrs. E. & F. N. Spon. This is an exceedingly useful book, and literally supplies "a long felt want" so far as this country is concerned. Although the author admits that for general work steam is not likely to be preferred to hot water, yet he thinks it is specially adapted for heating factories, very high buildings, and public buildings generally. A steam heating plant, he argues, if properly constructed is frost proof; quickest in results; and cheaper than the hot water system, though he admits the disadvantage of steam heat being difficult of regulation. What the author aims at in this book is to afford the working steam-heating engineer all the information there is to be had relating to the work he is engaged in, whatever branch it is, and to give this in a manner that will enable him to plan and execute work correctly, remembering that it is seldom that two apparatus ever resemble one another in detail. The designing or scheming of the work, the needed calculations for pipes and radiating surfaces, the choice of appliances, and the final execution are all described and illustrated. The author has done his work well, and has been careful and clear in the setting out of all technical data. There is a good index, and an appendix contains thirteen tables of use to the steam-heating engineer.

THE latest addition to Weale's scientific and technical series is "Cabinet Making," by R. Bitmead (London: Crosby Lockwood & Son). This is a book on cabinet making by a cabinet maker, "based on an experience of twenty-five years." Besides dealing with the ordinary and general work of cabinet making, the author gives all necessary instructions for veneering and inlaying in fancy woods, for both flat and shaped surfaces, as also the process of dyeing veneers throughout their entire thickness, together with the methods of working and staining ivory, marqueterie, buhl-work, etc. A number of valuable recipes are given, and much useful information of a miscellaneous character.

NOTES FROM BOSTON, U.S.A.

By R. BROWN.

BOSTON SOCIETY OF ARCHITECTS.

AT the last monthly meeting of the Boston Society of Architects, held in the new rooms of the society at 14 Somerset Street, Mr. Chas. Cummings, the president, spoke feelingly of the death of Mr. E. C. Cabot, giving a sketch of his life and work. Afterwards there were reports from various committees, and later in the evening Mr. Henry C. Holt spoke on the Caryatidæ Porch of the Erechtheium, treating of the outward inclination of the axis of the statues and the conclusions resulting therefrom. His remarks were illustrated by photographs and drawings thrown on the screen. Mr. I. Howland Jones spoke on other portions of this temple, and he exhibited a number of full-size details made from measurements taken at the building. Mr. H. L. Warren, in moving a vote of thanks to the speaker, suggested that the society should send Mr. Jones to make a complete monograph of this edifice. The subject was discussed, and finally referred to the executive committee. Before adjourning the secretary announced that on the afternoon of the day of the next monthly meeting the society would visit the new Colonial Theatre, the work of Mr. C. H. Blackall, and of which some description has appeared in the *B.A.*

TWENTIETH CENTURY CLUB.

Mr. C. Howard Walker gave a lecture at a recent meeting of the art department of the Twentieth Century Club, on a "Municipal Art Commission." Mr. Walker returned a few months ago from abroad, and is endeavouring to improve our administration of civic affairs pertaining to the appearance of our streets and architecture generally. After a campaign of education it is to be hoped that some kind of board will be formed for this purpose.

PAN-AMERICAN EXPOSITION.

A conference of the commissioners of the Pan-American Exposition, to be held at Buffalo, was recently held in Boston. The New England Commissioners will be urged to hasten their building, as many of the other States have their structures already nearly completed. Not an ounce of coal is used in the conducting of the whole plant. Niagara Falls supplies the power for the light, and in reality forms a part of this Exposition. The South American Republics will be fully represented. Chili has appropriated 200,000 dollars for its part in the Exposition. Mexico will occupy 5,000 feet of space.

AMERICAN ANTHROPOLOGICAL INSTITUTE.

The American Archæological Institute held some meetings lately to which members of the Society of Architects were invited. At one of these Mr. Howard Crosby Butler gave an interesting illustrated lecture on "The Deserted Cities of Syria." The lecturer stated that a large desert region in Northern Syria, heretofore unexplored, is found to contain numerous deserted cities, with Roman and Christian churches of the first five centuries. Lantern views of these buildings illustrated the lecture.

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COMPETITORS AT FAULT.

In the recent competition for the cover of a music-hall programme given by Messrs. Chickering & Sons, the piano makers, the prize of 500 dols. was carried off by Miss Smith, of Philadelphia. The designs, which number about 300, are to be exhibted soon. A "lady" competitor in the West wrote to one of the three judges and offered him 50 dols. if he would vote for her design (giving her *nom-de-plume*) and she also offered him another 50 dols. if he would get one other of the judges to do likewise. She said she "really needed the money!" If there is any "Corrupt Practices Act" in this country this "lady" should be called to account.

It seems difficult to keep public architectural competitions fair and square, as will be seen from the enclosed newspaper report entitled "Scandal among Architects." "The award on the competition between twelve architects and architectural firms in private practice for the design of the Indianapolis public building was made this noon (January 17) to Rankin & Kellogg, of Philadelphia. In their report to the secretary of the treasury the commission of experts say that only eleven sets of drawings came to hand. Of these it was discovered that one set bore a distinguishing mark whereby the authors might be identified; and in addition it was developed that information had been given to one of the members of the commission disclosing the identity of the authors of this design. The commission, therefore, adopted unanimously a resolution which recites the sections in the regulations prohibiting any identification of a competitor or any action designed to influence any member of a commission in his favour, and then discloses the fact of the marking and the information given a member of the commission, and resolves that the commission declines to examine the drawings marked."

SOME BUILDING ITEMS.

At present the following municipal buildings are in progress:—A new House of Correction at Dear Island—Mr. A. Warren Gould, of Ward 20, is the architect; an addition to the Roxbury Court House, for which Mr. J. Lawrence Berry is architect; and an addition to the Charles Street Jail, for which Harrison H. Atwood, of Ward 24, is architect. The estimated cost of each undertaking is about 100,000 dols., and each architect will receive 5 per cent. on the cost of the work.

At Chicago it is intended to build on the Lake Front an Art Palace and Exposition building at a cost of about 2,000,000 dols.

Mr. Andrew Carnegie continues to give away money for the building of libraries. He has agreed to give the city of Syracuse, New York, 200,000 dols. for the building of a public library, provided the city will furnish a suitable site, and guarantee 30,000 dols. a year for the maintenance of the library.

A LITERARY ITEM.

The January number of the *Architectural Review* (Bates and Field Co., Boston) contains a fine bird's-eye view of proposed buildings for Washington University, St. Louis, United States, by Messrs. Cope & Stewardson, architects, of Philadelphia, and six plates of details of the various buildings. The same number contains an illustrated article on "The Longleat Flower Garden," by Miss Rose Standish Nichols, and an article by Mr. R. Brown on "English Half-timber Architecture."

ENGINEERING AND SANITARY NOTES.

BY CHAS. E. GRITTON, A.M.I.C.E.

THE ELECTRIC LIGHT ON THE EMBANKMENT.

IT was in December, 1878, that electric lighting was first tried on the Embankment, and the old Metropolitan Board of Works is to be credited with this enterprising experiment, which was not, however, in the end a success, the use of gas being ultimately reverted to. But now it may be safely said the electric light which has just been installed once more on the Embankment has come to stay. The present scheme was initiated by the London County Council, and the total cost is estimated at about £25,000. The number of lamps to be erected is about 150, distributed along the parapet of the Embankment, the side of the pavement away from the river, and Westminster Bridge. Less than half that number, however, are as yet in place, for the Council have bent all their energies upon the getting ready of the parapet lamps for use at once, leaving the rest to be finished subsequently. About 60 or 70 lamps fringing the river from Westminster to Blackfriars Bridge are now in use, and these are placed in the lanterns of the original standards designed for gas jets when the Embankment was made. The standards thus remain almost exactly as they were, the only alteration being that the same company has fitted the lower part of the lanterns with ribbed glass in order to diffuse the light. These lamps on the parapet burn for 40 hours without attention, take five or six amperes, and are of the nominal power of 1,000 candles each; the circuits are arranged in parallel series of ten lamps each. The rest of the lamps, to be installed on Westminster Bridge and along the other side of the Embankment, will be more powerful, taking 12 amperes each, burning 60 to 80 hours, and having a nominal candle-power of about 2,500. The power-house contains four two-pole dynamos of the Manchester type, having a capacity of 50 kilowatts each at 500 volts, made by Messrs. McClure and Whitfield, of Stockport. These are rope-driven by four 70 horse-power "Stockport" gas-engines, which are fitted with self-starting gear, and with duplicate ignition, to ensure certainty of action. A by-pass is also arranged round the meter so that if the mechanism of the latter should fail to act, a supply of gas will still be available. The electrical energy is conveyed to the lamps in copper cables, with paper insulation and lead coverings, laid in the subway which was provided under the pavement by Sir Joseph Bazalgette when the Embankment was constructed.

A TELEGRAPHIC CODE FOR ALL COUNTRIES.

It seems late in the day, perhaps, to talk of improvements in submarine cabling when wireless telegraphy bids fair to supplant at any rate the cross-Channel communications. But it is nevertheless interesting to learn that the number of wires between this country and Germany will in three months' time be increased from 20 to 24, thus offering additional facilities on an entirely new cable for Continental telegraphy. Further, it has been agreed between the postmasters in London and Berlin that, in order to expedite the translations and repeatings of code messages as received at either end, extra men of both nationalities shall augment the ordinary staff. Thus German telegraphists will come to London and the coast stations, whilst English operators will go to Hamburg and Berlin.

INTERNATIONAL MACHINERY EXHIBITION.

An international machinery exhibition will be held at Breslau from June 6th to 8th. Particulars may be obtained from Maschinen Austellungsund Markt-Commission, Mathiasplatz, 6, at Breslau.

TO CHECK-MATE THE WATER COMPANIES.

Mr. R. P. Whellock, A.R.I.B.A., has issued a pamphlet entitled "Pure Water for London," describing the details of his scheme for a supply of water for drinking and domestic purposes from "the vast subterranean storage of water known to exist below the London basin."

THE GREATEST MECHANICAL ADVANCE OF THE NINETEENTH CENTURY.

In his last lecture at the Royal Institution on "Practical Mechanics," Professor J. A. Ewing discussed the doctrine of energy. First describing and illustrating the difference between kinetic energy, or the energy stored in a moving body, and the energy of position (potential energy), such as was possessed by a raised weight, the lecturer remarked that energy was a Protean thing, capable of assuming manifold forms, and the doctrine of the conservation of energy asserted that, in all transformations there was no creation or destruction—the stock remained unaltered. This conception might be called the greatest mechanical advance of the nineteenth century, for it was only grasped fully in that century after Joule had carried out the measurement of the mechanical equivalent of heat. Almost all the energy available for man's use was in the ultimate analysis derived from the sun's radiation, and,

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according to the principle of the dissipation of energy, every transformation it underwent involved its change into a form in which it was less available than before. The great problem before the engineer was the more efficient utilization of heat-energy. The steam engine of to day was more efficient than that of Watt's time, but much remained to be done. One possibility was the use of steam at a higher temperature in the engine, and a system of thus "superheating" steam was now being introduced to this country from Germany, by which 1½ lb. of coal could be made to yield one-horse power for one hour, as against 2 lb. required by the best ordinary engines. The modern turbine engine, as developed by the Hon. Charles Parsons, was remarkable, not only because balancing troubles were removed, there being no reciprocating masses, but also because, in its latest form, it gave a greater return for a given quantity of steam than any other engine. Professor Ewing concluded by saying that, although prophecy was difficult, he thought in the history of the steam engine the name of Parsons would stand beside that of Watt.

EXETER'S SEPTIC SEWAGE SCHEME.

Mr. Donald Cameron, City surveyor, reports that the work of constructing the main intercepting sewer, is now finished, with the exception of two lengths. A considerable amount of reconstruction of branch sewers has been done, which was not contemplated when the scheme was laid down, nor included in the estimate. The work of constructing the outdoor conduit is now completed from Ducks' Marsh to the lower end of Belle Isle, including the syphon across St. James's Leat. The outfall works are well advanced, the roofing of the tanks being now in hand, and the construction of the filter beds are being proceeded with. Expenditure up to the 14th inst. has been £18,671, and the estimate to complete the works is £15,483, making a total of £34,154. With regard to the St. Thomas's sewage, the Local Government Board have written that they raise no objection to the septic system "as an experimental process, for which the Town Council take entire responsibility," but consider that the works should be designed on a basis of a minimum dry weather flow of 230,000 gallons a day, instead of 170,000 gallons, as proposed; and, in accordance with their usual practice, require provision to be made for treating excess liquid beyond three times, but not exceeding six times, the dry weather flow by the construction of a special streaming filter or filters of sufficient extent to admit of a rate of filtration not exceeding 500 gallons per square yard per diem—that is to say, a special filtering area of not less than 1,400 square yards. The Board therefore asks for amended plans.

PROPOSED TUNNEL UNDER THE SOLENT.

Princess Henry of Battenberg, as Governor of the Isle of Wight, is to be asked to give her support to the Bill which is to come before Parliament authorising the South-Western and the Isle of Wight Junction Railway Companies to construct a tunnel under the western channel of the Solent between the mainland and the island. The Isle of Wight Highways Committee have unanimously adopted a resolution to that effect.

SOME ENGLISH CATHEDRALS.*

BY ALFRED DARBYSHIRE, F.R.I.B.A.

(See Illustrations.)

MY remarks are intended to explain a set of views prepared by my friend, Mr. Copland, of some English Cathedrals. As we are, for the first time, showing these pictures to an audience of my professional colleagues it seems desirable and, indeed, necessary that I should explain how this lecture, or paper, came to be written. Some time ago my friend, Mr. Copland, was persuaded to exhibit his Cathedral views at a social gathering of artists and literary men, on which occasion it fell to my lot to explain, in a conversational manner, the points of interest illustrating the various phases of Gothic Ecclesiastical Architecture. Out of that modest attempt has grown the more ambitious effort of this evening, and I feel some diffidence in laying before you what is intended for a popular rather than a professional audience. As, however, there are students in your society I trust that some of my remarks may not fall on unwilling ears. I remember as a young man once meeting Sir Gilbert Scott at Ripon Cathedral. I was working in water-colour, in my student style, and, after a while, the conversation led up to the remark, "I am only a student, sir." "Only a student?" remarked the great man; "why, so am I! Once a student in our profession always a student." All my life I have believed that statement to be absolutely true, and, therefore, I trust the senior members here to-night will forgive me if I treat my subject from the student point of view.

It is a curious fact that several of the most famous architectural edifices representative of the art and civilisation of great historic epochs stand on high, rocky eminences. For instance: the greatest civilisation of the Greeks, in the golden age of Pericles, is represented by the Temples which crown that isolated rock, which rises from the plains of Attica, and known as the Athenian Acropolis. Again—the Moorish occupation in Europe, and consequently the triumph of the Crescent over the Cross, is marked by the Alhambra, standing on the rock which looks over the plain of Granada in Spain; and the triumph of the Cross over the Crescent is to be noted to this day in the grand pile of the Cathedral Church which solemnly and grandly towers over the City of Durham.

There is not to be found in England (nay, scarcely in the world) an architectural picture so beautiful as the view of Durham Cathedral from the river. There it stands on its rocky eminence, a monument of the early phase of Christian art in this country; and we may well select it as an illustration of the Norman work which constitutes *the foundation* of our English Gothic Architecture.

We might well devote the whole of this evening in talking of and in looking at Durham Cathedral. The story of its origin reads like a romance. Nearly a thousand years ago, a number of pious monks, flying from the conquering Danes, ultimately found their way to Dunholm (The Island Hill). We can picture them winding their way up this thickly-wooded eminence on a golden sunset evening; they are reverently carrying a burden, which consists of the remains of the Sainted Cuthbert, the pious hermit of Lindisfarne. The leader of this cavalcade is Bishop Erdulf, who has, through the medium of a dream, been assured that the final resting place for St. Cuthbert must be Dunholm. Encountering a milkmaid leading a dun cow, they ask "Where is Dunholm?" She replies "Here, surely, is the place." They ascend the rock and wooded eminence, and gazing over the beautiful landscape exclaim "Here at last is rest." They cut down trees and build a wooden church, in which after a hundred years of wandering and vicissitude the body of St. Cuthbert is reverently deposited, until an architectural shrine can be constructed worthy of the venerated relics. Such is the origin of Durham Cathedral. The Conqueror came from Normandy; the Castle and Cathedral of Durham were built, and the Earldom of Northumberland and the See of Durham were united and vested in one man, Bishop Walcher.

Durham is one of the few cathedrals commenced and completed in one period of Gothic Architecture. It is the best example we can offer you of the Norman influence in Gothic Architecture. It was commenced in 1093 and completed in 1273. Time will not permit of a longer notice of Durham, but we cannot part from it without a hasty look into the nave. No words of mine can convey to your minds anything like an idea of the massiveness and grandeur of this interior. In it we can trace the advance of architectural art under the Norman influence in the details of the chevron and billet mouldings, and in the method of vaulting adopted in the roof, which seems to have been the last effort of the Norman architects, or possibly the first work of the early English builders.

We pass on to the Galilee or rectangular porch at the west end of the nave. This beautiful bit of transition

* A paper recently read before the Liverpool Architectural Society. Mr. Darbyshire prefaced his paper with some observations on the Architecture of the world anterior to that phase which we call Gothic Ecclesiastical Architecture, or the Architecture of the Church. The paper was really a conversational lecture explanatory of the beautiful limelight views prepared by Mr, Copland. We reproduce some of these views.

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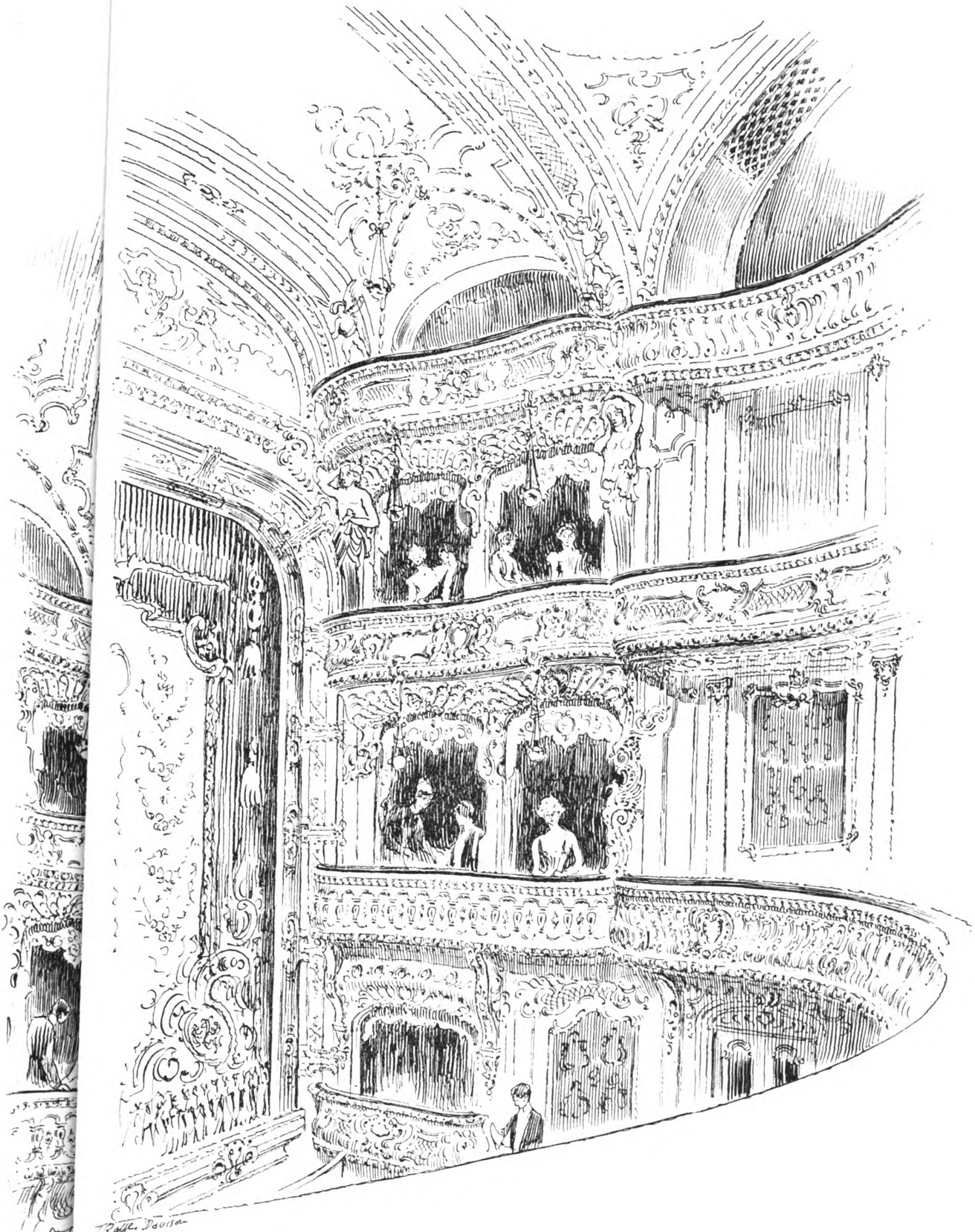

View from Dress Circle

THE APPOLLO THEATRE
SHAFTESBURY AVENUE
LEWEN SHARP ARCHITECT

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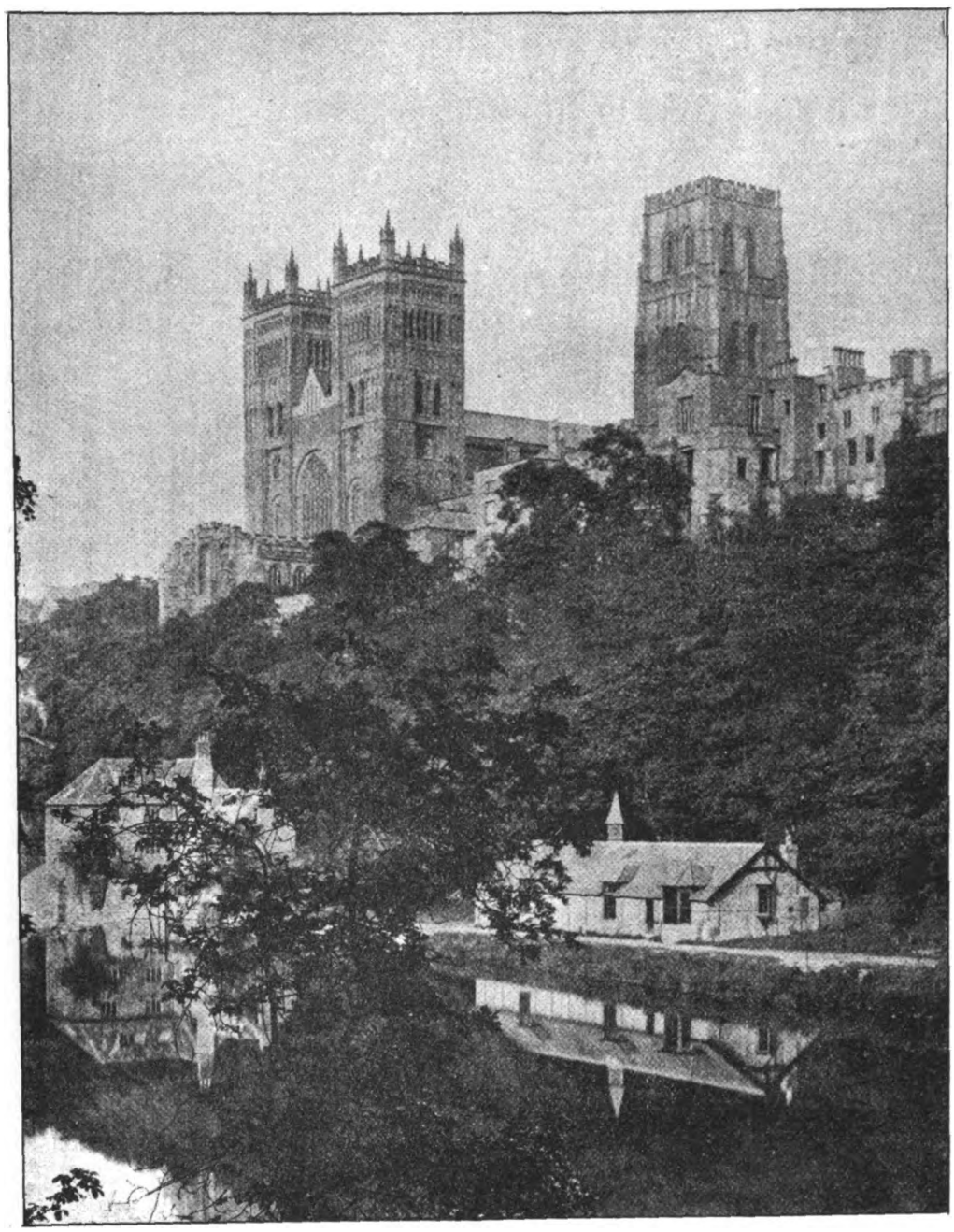
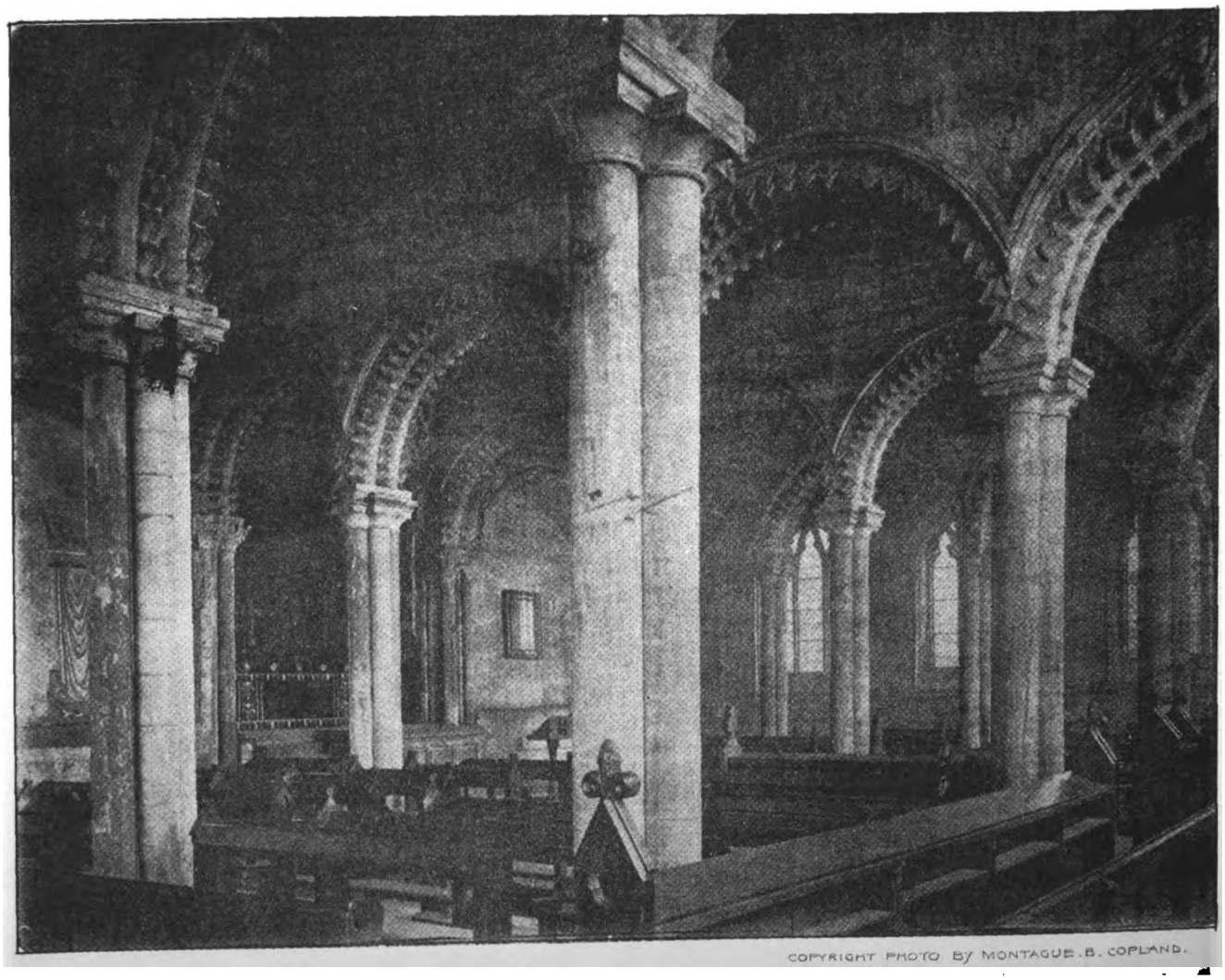


DURHAM.



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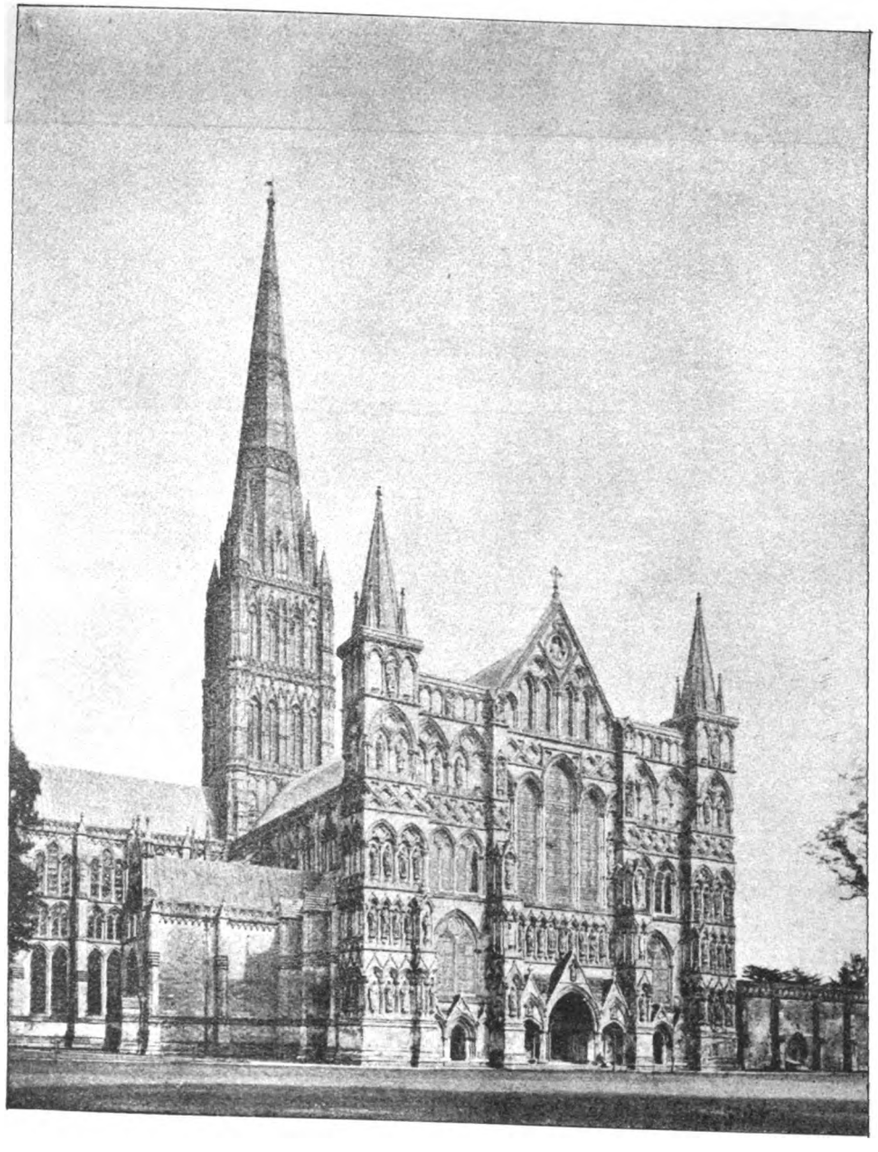

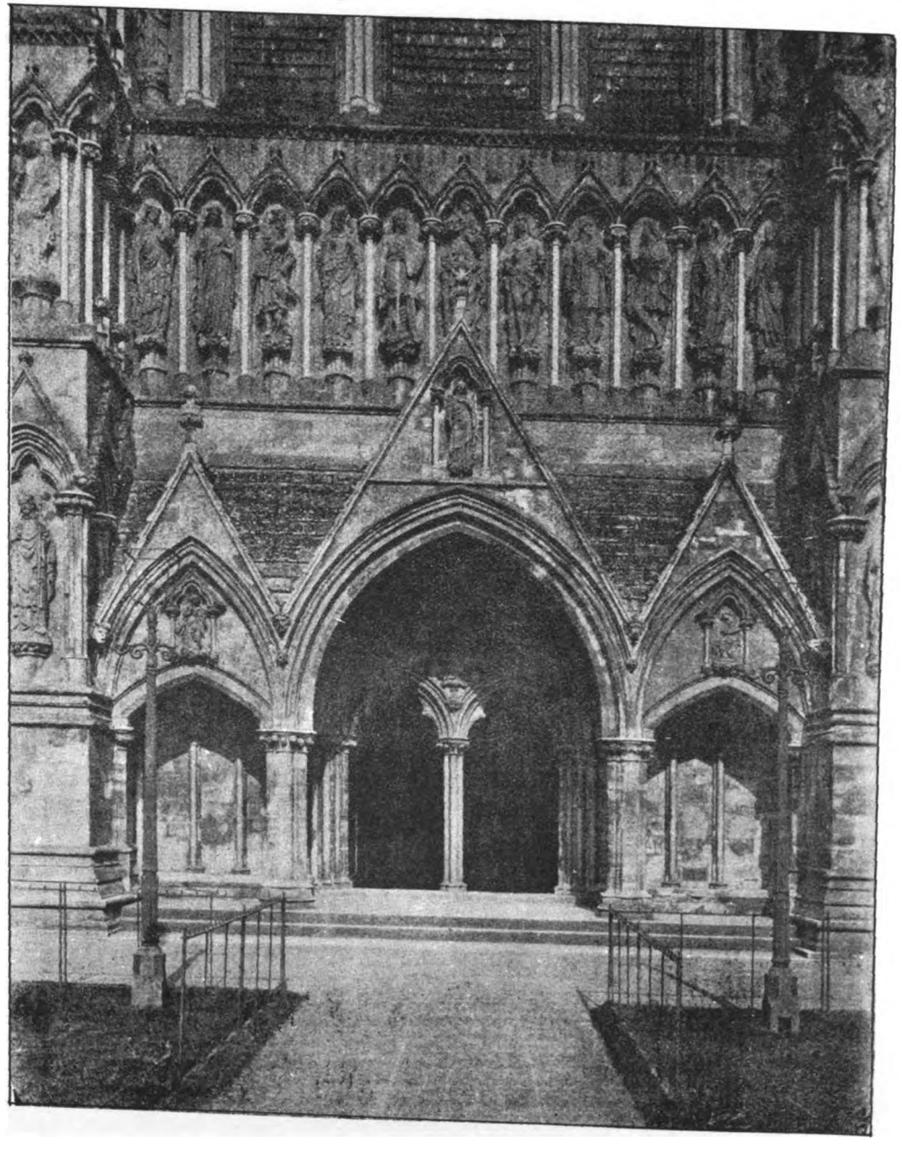

SALISBURY

ON ENGLISH CATHEDRALS
By A. DARBYSHIRE F.R.I.B.A. Nº 2

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Norman was built by Bishop Hugh de Puiset (or Pudsey, as he is sometimes called), from 1153 to 1195. There can be little doubt that this was intended for a Lady Chapel (a chapel dedicated to the Virgin); for we know that Pudsey brought material from abroad, and commenced building his chapel at the east end, where now stands the Chapel of the Nine Altars, but the foundations gave way, and the chapel had to be erected on the solid rock at the West End, where we now see it. The Galilee formed a sort of neutral ground between the outer world and the Church; here persons doing penance were stationed, and bodies were here deposited before interment. Persons were allowed to see their monastic relatives or friends in the Galilee, and a writer has attempted ingeniously to explain the origin of the term "Galilee" by asserting that when a person applied at the monastery door to see a relative he was told in the language of Scripture, "He has gone before you into Galilee, there shall ye see him." In this Galilee was deposited the body of the Venerable Bede. The stone covering the spot bears the famous inscription, "Hac sunt in fossa Bede Venerabilis Ossa." The story goes that the epithet "Venerabilis" from that time always attached to Bede was supplied by an angel, during the sleep of the monk who was unable to complete his line. The North door is a characteristic example of the round-arched work and the ornamentation peculiar to the Norman builders. An interesting feature of this door is the large bronze sanctuary knocker. We leave Durham with a parting glance from the Warden's Bridge.

Now we take unto ourselves wings, and fly with Mr. Copland's camera far away South, over the monoliths of Stonehenge, and alight on the green carpet and amongst the trees of the Cathedral Close of Salisbury. Here we see the gem of the Early English Period of Gothic architecture. With the exception of the spire, this cathedral was built in one Period. This cathedral was commenced by Richard Poore (Bishop in 1220), completed and consecrated in 1258, thus having been built in 38 years. The lofty spire on which the reputation of Salisbury has more particularly rested seems not to have been part of the original design, but to have been conceived one or two generations later. He must have been a bold architect who added such an enormous weight to the piers beneath. It is 404 feet high. Before entering the cathedral we will look at the doorway. Now we pass into the nave and look towards the East End.

We must leave Salisbury with its heaven-pointing spire without even a glance at its canopied niches, filled with statues, or its tombs of knights, nobles and ecclesiastics. A local poet has written of Salisbury—

> "As many days as in one year there be,
> So many windows in this church you see.
> As many marble pillars here appear,
> As there are hours through the fleeting year.
> As many gates as moons one here does view;
> Strange tale to tell; yet not more strange than true."

We return to the North to visit the stately pile of Lincoln. This cathedral occupies a commanding site; it lacks the trees and view of Durham, but in other respects its situation is as imposing. We visit this cathedral because the major part of it was erected during the Early English Period, and also because we shall find magnificent illustrations of the Third or Decorated Period, not exceeded in beauty by any other examples. Bishop Remigius, of Fescamp, commenced building this church about 1075. In 1185, according to an old chronicler, Roger of Hoveden, this Norman cathedral was cleft from top to bottom by an earthquake. The re-building was commenced by Bishop Hugh, of Grenoble, in 1186, and carried on by him till the year 1200. Therefore by far the greater part belongs to the Early English Period. Viollet le Duc, the celebrated French architect and antiquary, has remarked: "Hugh of Lincoln may be considered the founder, if not the inventor, of the national and most excellent style of Early English Architecture."

We now enter the nave. We may note here that the massiveness of the Norman construction has entirely disappeared, and has been succeeded by clusters of elegant shafts, with beautifully-carved caps supporting the main arches. Over these arches is the Triforium, consisting of sharp-pointed triple-arched openings. Over these again is the Clerestory, admitting the light through three lancet-headed windows. Crowning all is the splendid stone-vaulted roof, the glory of the Early English builders. Continuing our walk down the nave, we pass under the organ loft and enter the choir. Here we may note interesting differences of detail between the late Early English of the nave and the Decorated work of the East End of the cathedral. The ornamentation is more conventional and antique in character and the constructive features rather more severe. The stalls are arranged between the organ screen and the opening of the Eastern transept. They are of late Decorated times, and the work of Treasurer Welbourn (1359-1380). Pugin, a well-known authority, has said: "They are executed in the most perfect manner, not only as regards variety and beauty of ornamental design but in accuracy of workmanship, which is frequently deficient in ancient examples of woodwork."

During my studies in Lincoln many years ago, an enthusiastic member of the Lincoln School of Art (son of the Head Verger) might have been seen carefully drawing and painting these elaborate stalls; an incident occurred which suggested to the youth an idea for a subject-picture. He finished it, and sent it to the Academy. The picture was called "His Last Vespers." That artist was William Logsdail, now a brilliant painter, and one of whom the English School is justly proud.

Returning to the outside, we will take a look at the East End. Here we note an exterior of the Decorated Period, including the grand East window, filled with delicate tracery of geometric form. We will re-enter through the South door (a beautiful example of the enriched character of Decorated Gothic), and we at once find ourselves in the Retro-Choir (generally known as the Angels' Choir). This constitutes our example of the Early Decorated work. We have not time this evening to notice the subleties of what are called periods of transition between one style and another, therefore we will consider the whole East end of Lincoln as Decorated Gothic work.

One of the finest poems ever written in stone is the Lady Chapel, which forms the entire East end of Lincoln Cathedral, built between 1256 and 1280. This is our grand example of the transition from Early English to Decorated Gothic. So ingeniously has the designer contrived to follow or continue the beautiful Early English of the choir that the eye glides imperceptibly into the new style. After a short contemplation of the work one is surprised and enraptured with the exquisite refinement of form in columns, arches, molds, and capitals. Every inch has added beauty to the pure and severe feeling of the Early English work. We may note that here, almost for the first time, human form takes a place in the National Architecture. Here, in this glorious Lincoln Chapel, are worked in the spandrils between the Triforium arches, figures of angels, each with a musical instrument of different design, but all sending forth one great hymn of praise; hence the poetic name given to this architectural gem, "The Angels' Choir." The effect produced on the mind by a contemplation of this beautiful work is very satisfying and very pleasing. It is always pleasant to look upon beauty either in Nature or in art. I have sat for days in this lovely choir; the morning sun has streamed in through the painted glass of the East window, lighting as it moved along columns, arches, angels, shrines, and tombs; decking themw ith rainbow colours. All around lie the sleeping dead: some beneath plain slabs, others resting in effigy under the most exquisite canopies. I have sat and worked under the spell of absolute stillness, through the twilight till the shades of evening crept quietly and silently over everything; and I have parted with so much beauty with a sigh of regret, but thanking heaven for the genius which gave it being.

We must always remember that this lovely work was the medium through which English Ecclesiastical Architecture glided, so to speak, into that glorious Edwardian Gothic in which our national architecture reached the acme of its beauty and the meridian of its truth. In the North aisle at Lincoln we see the perfection of Early English work in the clustered shafts, conventional foliage in the capitals, and in the vaulted roof carried on moulded ribs which form a pointed intersection.

The width of the West front is 173 ft., and the height to the spring of the gables is 83 ft. It is a mixture of Gothic Periods grafted on to the Early Norman work. The right-hand spire is terminated by a statue of St. Hugh, of Lincoln, and the spire on the left hand by the "Swine-

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herd" blowing his horn; thus immortalised because he saved up a peck of silver pennies towards the cost of St. Hugh's work.

We now enter the South transept. The transepts of Lincoln are remarkable for their examples of the circular, or "Rose," windows, as they are sometimes called. The one you now see is certainly one of the most beautiful Decorated windows in the world; herein we see the flowing lines of "decorated" tracery; this flowing tracery was carried to such an absurd extent in Continental architecture that it has been called "Flamboyant." Leaving the North aisle we walk into the cloisters; and here we see one of those monstrosities which were perpetrated by Sir Christopher Wren, Sir Geoffrey Wyatt, and other classical architects, and which constitute so many blots and architectural blisters on the sacred piles of our Gothic cathedrals.

The chapter houses of our cathedrals form beautiful and interesting objects, and we may take the one at Lincoln as a typical example. These chapter houses were built for the meetings of the ecclesiastics who conducted the business connected with the Church government. The arcading round the walls formed the seats or stalls, and the seat of the Abbot, Dean, or other presiding genius was usually marked by richness of design and peculiarity of position. The date of this example is about the middle of the 13th century. It is later in date than that of Salisbury, which was built about 1250. The plan is a decagon, having its 10 sides connected by ribbed vaulting, which springs fron the beautiful central column, composed of 10 shafts or columns of Purbeck marble.

Before leaving the Decorated Period of Gothic Architecture we may, in a few words, sum up its main characteristics. We find large doorways and porches (such as we have seen on the South side of Lincoln); the mouldings are increased in number, and refined in section. Canopies are introduced, with crockets and finials of elaborate design and minuteness of detail. Carving and ornamentation adhered to natural forms, statuary was freely introduced as a part of the architecture. The tracery of the windows developed the most beautiful forms, both geometric and flowing. In the Decorated Period also, the beautiful Eleanor Crosses were erected wherever the Queen's body rested between Grantham and Westminster.

(To be continued.)

OUR ILLUSTRATIONS.

SOME ENGLISH CATHEDRALS.

THE views we give this week of Durham and Salisbury Cathedrals are taken from a series of very fine copyright photos prepared by Mr. Montague B. Copland, and, with other views we shall give next week, illustrate a paper on "Some English Cathedrals," read a short time ago by Mr. Alfred Darbyshire, F.R.I.B.A., before the Liverpool Architectural Society. We publish a first instalment of Mr. Darbyshire's paper elsewhere in our present issue.

THE NEW APOLLO THEATRE.

LEWEN SHARP, ARCHITECT.

We continue our illustrations of this excellent building th views of the interior taken from the dress circle and e dress circle box.

THE R.I.B.A. STUDENTS' COMPETITIONS.*

BY J. ALFRED GOTCH, F.S.A.

THE ESSAY PRIZE.

AN essay such as the Institute seeks should, first of all, have some literary merit; always granted, of course, that it deals adequately with the subject in hand. The subject should be handled in a manner broad and yet pointed. If you are writing about Cæsar, we do not want long disquisitions about Cæsar's wife, however great her influence over her husband may have been. If you are asked for a history of Cæsar, do not spend much space upon Pompey's opinion of him, however interesting it may have been. So, too, with the illustrations, they should be to the point also; they should elucidate and enforce the arguments and the statements of the text. Give us portraits of Cæsar by all means, but do not throw in portraits of his distant relatives who have nothing to do with the story. But, to be of any use, the essay must have life; it must be readable. To be readable it need not be flippant, but it must not be dull. Too much learning has a tendency to overwhelm the author, as the knight was smothered in his armour; and when you go to the Wallace collection, you wonder how so many escaped suffocation. Allusions and quotations there should be, but not so recondite as to offend the less informed reader; and humour should also be there, but quite subdued. Like the onion in Sydney Smith's salad, it should

> "lurk within the bowl,
> And, unsuspected, animate the whole."

Of the essays submitted this year one was readable and to the point, but had no illustrations; another had less of the first two qualities, but had many illustrations, some of which, however, were beside the mark; the third was fairly to the point, but for its style, as Holofernes said of the poetry in Don Armado's verses, "for the elegancy, facility, and golden cadence, *caret*."

I sometimes wonder why there are not more essays submitted, and why their quality is not better. It is a matter worthy of reflection, for, taking us architects as a whole, we are singularly lacking in literary style and in the facility for expressing ourselves in a manner at once attractive, elegant, and lucid.

MEASURED DRAWINGS PRIZE.

The next subject in the order of the official list is that of Measured Drawings of Ancient Buildings, of which eight sets were submitted. It is a significant sign of the times that one of the prizes should be taken by drawings of a building so late in date as St. John's, Westminster, and that the silver medal and the other prize should have gone to those of Elizabethan houses, leaving what Gothic buildings there were without reward. But the justice of the award will hardly be questioned, even by the unsuccessful competitors. The Gothic drawings were hardly up to the requisite standard in two of the cases; whilst the third presented such an intricate mixture of small scale, large scale, and full-size drawings on every sheet that the mind reeled in the endeavour to unravel them. It is a curious fact that the silver medal and one of the others have been given to drawings of two buildings in the same county—Kirby Hall and Burghley House—both of them masterpieces of the Elizabethan period. I should be the last to quarrel with this selection, whether of the students or the council, but I should greatly regret to see Gothic work disappear, even temporarily, from this competition. So far as mere draughtsmanship goes, its study is even more arduous than that of Elizabethan work. That, however, is not the only point to be considered, and it is to be hoped that the taste of the rising generation in selecting subjects of study will be as catholic as ever.

THE PUGIN STUDENTSHIP.

Although not next on the official list, it will be convenient to take the allied subjects of the two studentships next in order, and first for the Pugin Studentship, perhaps the most fascinating of all the prizes offered by the Institute. For it is earned, not by laborious plodding in a dull office, not by a consideration of dreary formulas, or a study of the wants of man in his various capacities as the user of a club, or a stroller in a park, or a foot passenger desirous of crossing a stream, but in delightful journeys from one village to another, either in our own richly-endowed land

> "Or by the lazy Scheldt or wandering Po";

journeys in which every sketch has its own memory—the quiet of a country church, the gloom of a castle guard-room, the rain pattering on lead roofs, the sun drawing shadows across lichen-covered walls, amid the scent of old-fashioned flowers and the hum of the distant reaper. That is how the Pugin is earned, and it is spent in a more systematic prolongation of the same delights. Yet, after all, the Pugin is only a means to an end. Its object is not

* A criticism read at the R.I.B.A. meeting on Monday evening last.

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merely to make young men facile sketchers, but to lead them, through the observation of the work of the men of old, to do their own better.

The winner this year, Mr. Cotman, has worthily won the prize. There is a variety of subject and of treatment about his sketches such as none of the other competitors attain. His perspective is accurate; his figures are delightful. He attacks the Gothic work of Lincoln Cathedral with as much address as the Renaissance of the Council Chamber at Oudenarde. Not only does he give us finished drawings, but, what is more important, pages from his sketch-books just as they left his hand. In this respect the other two prize-winners, Mr. Forbes-Smith and Mr. Pilcher, are shortcomers. Their sketches are clever, and the subjects are varied; but of that intimate relation between the hand and the book which tells us so much we see little. Mr. Shirley Harrison's sketches are free, clever, and accurate, but they are, as it were, his speeches, not his homely talk. The same may be said of Mr. Cook's drawings, which also are excellent. Of the other sketches some are too laboured, and others hardly strong enough. There is one thing which I should like to see practised more than it is, and that is sketching in ink instead of pencil. Its tendency is to induce accuracy—for there is no rubbing-out possible—and to impart a sure touch and vigorous handling.

THE OWEN JONES STUDENTSHIP.

For the Owen Jones Studentship there were six excellent sets of sketches submitted, and here again the winner of the studentship, Mr. Hervey Rutherford, was easily first in the variety of his work. Both in drawing and colouring his sketches were admirable; and it is satisfactory to find that in this competition, as well as in the Pugin, the quality of the studies tends to improve year by year rather than to deteriorate. I endeavoured to note those drawings which struck me as being the most pleasing or remarkable, but I find that in Mr. Rutherford's case I was obliged to say "all."

The high standard attained in this competition is proved by the fact that in addition to the studentship itself, there were three Honourable Mentions awarded, and it is worthy of note that out of the four prizes three go to Edinburgh. The three gentlemen who obtained Honourable Mention were Mr. Percy Nobbs, whose beautiful water-colour sketches of buildings were among his most pleasing contributions; Mr. Ramsay Traquair, whose best work came from abroad, and included some gay Spanish tiles, and some delightful intarsia panels from a church in Milan; and Mr. E. H. Bennett, whose facility with his brush was not surpassed by any of the others, nor his appreciation of colour; but the somewhat meretricious style which he adopted in his most important contributions, undoubtedly told against him. They were very clever, but cleverness is only one of the factors which go to win a students' prize. It is highly important that this should be so, for there is a very general tendency to worship cleverness for its own sake, apart altogether from the nature of the thing upon which it may be bestowed. Clever drawings, like clever people, are sometimes both shallow and disagreeable.

There was one point among these colour sketches which afforded food for reflection, and that was that there were two representations of the same subject, an enamel plaque of Geoffrey Plantagenet, in which there were two entirely different versions of the colour. Which was the more correct rendering of the original, it was of course impossible to say, but it was not difficult to decide which one hoped was the real colouring. So, too, of a panel from Ranworth Church. Mr. Rutherford had one version, and two of the Pugin competitors had each his own, and they all three differed from each other materially. It might perhaps be well for students, when engaged upon such work by themselves, to bear in mind that some other student may come along, and eventually exhibit the same subject on the same wall at the same time as the first comer.

THE SOANE MEDALLION.

We now come to the three competitions which involve design as well as draughtsmanship, and of these the first is that for the Soane Medallion. Now, as there were twenty-two designs submitted for this, twenty-six for the Tite Certificate, and eighteen for the Grissell Medal, comprising a total of nearly 300 strainers, you will forgive me if I am unable to exhibit a very profound knowledge of the contents of each strainer. You will, perhaps, even go further, and forgive me if, of the sixty-six designs submitted, I do not mention all. Indeed, it was impossible to master the main points of every design, let alone the minutiæ; and if there was any particularly pet piece of design which I fail to mention, you must not conclude that it was not there, but that I failed to notice it.

This great increase in the number of designs submitted is very gratifying; we may conclude that it indicates among students an increasing interest in their work. Whether it also implies an increasing slackness of work in the respective offices to which they are attached I do not know. We may also say that with the increase of numbers the number of fairly good designs has proportionately increased. It is not merely the fringe that is longer, but the garment itself. At the same time, so far as the Soane is concerned, the increase has not produced the master-hand; and this competition must be pronounced disappointing on the whole. It is no secret that the reason which led the Council to withhold the medal was the absence of a really good plan; and it is of the utmost importance to impress upon young designers the vital necessity of a good plan. There was more than one design in which the plan was sacrificed for the preconceived necessities of the front façade. As a matter of fact, neither plan nor elevation should be preconceived; they should grow up together. It is quite as much from the influence of modern life upon the arrangement of our buildings, as from the introduction of new materials, that we may look for the characteristics of a latter-day style. It should be borne in mind that the money prize accompanying the Soane Medallion would represent a very fair premium even in a competition for an actual building; it is therefore worth taking as much pains for as if the Soane building were actually to be erected; and to perfect the designs of an important building actually to be erected, no pains are excessive.

But there is about the Soane competition an absence of enduring responsibility which surely ought to stimulate the imagination and prompt young men, possessed of all the freshness and daring of youth, to embody some of the lofty ideals which they must have conceived. Do we find much daring originality among the 22 designs submitted this year? I can hardly say we do. It is true that out of that number there are 17 or 18 which might be built without materially decreasing the sum of human happiness, so far as their external appearance is concerned. But is there one which could be regarded, even by the most enthusiastic, as epoch-making? However, we cannot reasonably expect a new epoch to be started every year, and although, from this particular point of view, my remarks may have been disparaging, yet, if we apply a more ordinary standard, there is something to gratify us in nearly all the designs. My own feeling is that the most poetic in conception is the design with the motto "Ars," by Mr. M. J. Dawson; but "Hiawatha" (Mr. H. M. Cantley) has a simple and dignified façade; and "Ionic" (Mr. J. B. Fulton) sends, as might be expected, an extremely fine set of drawings. The elevation of his front façade I thought the most attractive of the whole series, but the perspective brings out one or two weak features, particularly the long segmental pediments at either end, which spring from solid abutments, but which are themselves too thin, being perhaps 12 or 15 feet long by seven or eight inches thick. I know that that particular feature is fashionable now, but even that fact fails to recommend it.

As far as mere draughtsmanship goes, the competitors may be congratulated; for out of the 22 sets there are very few which would have to be excluded on this account, and quite half of them are as good as any one could wish. They are in varying styles: two, which happened to be placed together, illustrate extreme examples. "Elsa" sends delicate pencil drawings, with all the detail very nicely put in; while his neighbour "Thor," like his somewhat boisterous namesake, has a heavy and determined hand, expressing itself in lines of amazing thickness. Nevertheless, there seemed to me to be a considerable amount of originality about the general disposition and some of the detail of "Thor's" elevation, and it had at least the distinction of not conforming to that particular rendering of late classic which is so much in vogue at present. In ma

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of the sets there were various little bits of happy design, such as must have given pleasure in the producing, and will continue to give pleasure in the contemplating; and although no one succeeded in carrying off the Medal, yet the mere fact of having attacked the problem, and endeavoured to solve it, will bring a certain amount of reward with it to all who really set their minds upon the task.

THE TITE PRIZE.

Turning now to the Tite Certificate, we find a subject requiring less elaborate preparation than the Soane, for an entrance gateway to a public park has less complicated requirements than a club. Either this fact or something else has attracted a large number of aspirants, and the result has been the production of a considerable number of passable designs and a few very good ones. The proportion, however, of those which, if erected, would give satisfaction, or, at any rate, fail to inspire regret, is not so large as in the case of the Soane; for here I can only conscientiously admit fourteen out of the twenty-six. The notions of what was intended by an entrance gateway to a public park appear to vary considerably among the competitors, as do the ideas of what the Tite Prize was founded for. It was founded for the study of Italian architecture, and how that can be reconciled with a design which consists, like "Le Nord's," of a marvellous mixture of French Renaissance, Dutch gables, Genoese ornament, English eighteenth-century windows, and telegraph wires in the sky, it is not easy to see. As to the accommodation to be provided, some competitors were content with an archway only, others included a porter's lodge, and one had an extensive frontage of such attraction that two steamboat piers were provided for the traffic it was likely to occasion. Nevertheless, although the design was rather too vast, its detail was to the point; and I, for one, am not going to quarrel with "The Bard" for exercising his imagination. The awards made by the Council meet the merits of the case, for "Corona's" design is dignified and interesting, and shown in a well-drawn elevation and perspective. "St. George" is also simple and fairly dignified, but it has the appearance rather of a subsidiary entrance to an important park than its chief gateway. The drawings are well executed, and include some capital metal work in the gates; but they are not altogether free from what I cannot help considering the rather widespread vice of affectation. It is not so rampant here as in some of the other sets in this competition and the Soane, but I think I detect it in the balloon-like drapery of the statuary and the hard, marble-like clouds. The third premiated design, by "Marble Arch," is also simple, dignified, and well drawn.

I must take the opportunity afforded by these remarks on students' drawings to protest against the affectation already mentioned as being prevalent among certain draughtsmen. It affects the accessories chiefly: skies are made to look like masses of telegraph wires, or are divided into parallel strips of dark cloud divided by thin regular lines of sky; figures are introduced hard and badly drawn, imitating the unpleasant style of Aubrey Beardsley. Sometimes the building itself suffers: coarse lines obliterate all delicate detail—and it should be borne in mind that very often "thick lines hide thin designs"—or the elevation and perspectives are put in with quavering, hard-drawn lines. These are only some of the forms which affectation takes—and occasionally with the hope of attracting attention which would never be bestowed upon the design itself. All such devices ought to be eschewed by a broad-minded student.

But let no one be discouraged by finding that he is not so expert a draughtsman as his neighbour. Drawing and designing are by no means interchangeable terms, and a study of the lists of past prize-winners may not only gratify the prize-winners of to-day, but go far towards comforting unsuccessful competitors with the thought that though their names do not appear on any of those lists, they may, nevertheless, be ultimately written in some corner of the scroll of Fame.

THE GRISSELL GOLD MEDAL.

But there still remains the Grissell Medal, for which eighteen designs were submitted. The subject is a simple one—a Timber Footbridge across a Stream—and it has brought forth from their modest retirement several designers of unambitious aims. Ambition should be made of sterner stuff than they appear to offer. But there are several designs which appropriately meet the case, and give us clear, simple, constructionable, and yet eye-able results. As I am just now playing the part of a critic, I will venture to do that which I should otherwise refrain from doing, and that is to say that I hardly agree with the council's award in this case. Not that the successful design is not pleasing—it is, perhaps, the most monumental of all. But the Grissell Medal is primarily offered for problems in construction: the problem here is a timber bridge; and I venture to think that the covering of "Pons Asinorum's" bridge is treated in a manner more suitable to stone than to timber; it is, indeed, strictly speaking, mere surplusage. The bridge itself is constructionally designed, but so are many others, and one or two of them have coverings which, in my opinion, are more constructionally designed than that of the prize-winner.

The ideas about this bridge vary as much as those concerning the club and the gateway. Some competitors are content to cross the stream in the simplest and cheapest way possible, in such a manner as would endear itself to the heart of an economical railway director; others prefer to lounge over the water under cover of a roof. Most of them cross at the level of the ground on either side, but one provides for somewhat lofty traffic on the stream, and makes his foot passengers climb a staircase at each end. One competitor, forgetful of the main object of the work, elaborates the detail of his stone piers too much. Taking the whole set of designs, there is hardly so large a proportion of success as in the other two competitions. This is, perhaps, hardly to be wondered at, because the problem involved in the Grissell competition is one of the most difficult which architects have to solve, namely, to make construction itself beautiful.

TRADE NOTES.

FREE GREYFRIARS CHURCH, Aberdeen, now in course of erection, is being ventilated by means of Mackay's Patent Invisible Roof Ventilators, of which Messrs. Cousland and Mackay, ventilating engineers, 150, Hope Street, Glasgow, are the sole makers.

THE Sturtevant Engineering Company, Limited, have removed their London offices and showrooms from No. 75 to No. 147, Queen Victoria Street, E.C. We might at the same time draw attention to the fact that the company's electrical department has recently been specially developed. While distinct in itself, it supplements the company's mechanical engineering departments, and in conjunction with their Sturtevant and other specialities, puts them in an exceptional position to carry out to the best advantage complete installations of electric power and lighting, mechanical draught, ventilating, heating, drying, dust collecting, etc., as applied to factories and workshops, public and private buildings, mines, shipyards, and other industries. The company have, we might also add, made a speciality of the manufacture of all types of controlling apparatus for the varied applications of electric motors to power driving. Having, therefore, their own systems of generators, motors, controlling rheostats, and all their accessories, the company are in a position to offer special advantages to their customers, both in regard to design and quality of the apparatus supplied. As the company have a very large stock of their standard apparatus on hand, they can promptly meet all demands for urgent delivery.

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The British Architect.

LONDON: FRIDAY, MARCH 8, 1901.

THE ARCHITECTURAL ASSOCIATION'S PROPOSED DAY SCHOOL.

THERE is to be discussed this (Friday) evening, at a special general meeting of the Architectural Association, a scheme for the establishment of Day Courses of Instruction in Architecture, as formulated by a strong Education Committee, appointed early in the present session, and which has been adopted, with few amendments, by the A.A. General Committee.

The scheme provides that the Studio shall be opened during the day and day classes established, and it is intended that the work in these classes and in the Studio shall be of a preparatory and supplementary nature, suitable for those who have entered, or are about to enter, architects' offices as pupils. The course of studies is arranged to cover one year, but students are to be afforded the opportunity of taking a second year in the Studio. The first year's course covers: (*a*) the use of instruments and scales; (*b*) freehand drawing; (*c*) the five orders of classic architecture; (*d*) the elements of the various styles of architecture; (*e*) the principles of mechanics; (*f*) elementary construction; (*g*) sketching and measuring details and portions of existing buildings; (*h*) thirty-six lectures on the history of architecture (illustrated by visits to buildings and museums); (*i*) thirty-six lectures on elementary construction and materials (illustrated by visits to workshops and buildings in progress). The second year's course comprises: (*a*) continuation, when necessary, of the subjects forming the first year's course; (*b*) perspective and sciography; (*c*) descriptive and applied geometry and graphic statics; (*d*) principles of architectural design.

There would be three terms in each year—autumn, spring and summer—and the fee for the full course would be 12 guineas per term or 35 guineas per annum, but students taking only the lectures to pay a fee of two guineas per term for each course, or five guineas per annum. A Master of the Studio would be appointed at a fixed salary, and he would deliver lectures on the history of architecture and elementary building construction. An assistant master would also be appointed. Each student would be expected to take up a course of reading under the direction of the Studio Master, who would also direct students as to their vacation studies.

The main idea involved in this proposed scheme of day courses of instruction is, as we understand it, to provide chiefly a means of preparatory education and training for those who purpose entering architects' offices as pupils, so that they may begin their pupilage with some actual definite knowledge of the elements of architectural education and training, and thus may be enabled to make a better use of their time as pupils than has hitherto been usually the case. This would also mean a considerable gain to the master in more ways than one. The raw youth who enters an architect's office, with little or no knowlege of drawing and knowing absolutely nothing of architecture and architectural practice, is a serious problem for an architect to tackle. If the pupil is wishful to learn, and persistently tries to do so, he becomes something of a nuisance by his constantly wanting to know what this means, and how that is done. And there is so much elementary knowledge to be acquired before a youth can really help himself and his master at one and the same time. On the other hand, the idle or indifferent pupil is a credit to nobody, never advancing himself, or becoming in any real sense useful to his master. Therefore, the idea of a preparatory school for architectural pupils commends itself as being likely to lead to good results. Such a school would admirably fulfil its purpose if it became a means of sifting the capacities and predilections of youths prior to their becoming architectural pupils. A twelve months' course at the A.A. School would pretty well determine whether it were worth while paying a premium for a youth, and binding him for the usual term of apprenticeship.

But, of course, it is not merely as a preparatory schoo that these day courses of instruction would be of value Where such arrangements could be made the attendance of pupils at the day classes would form a most useful adjunct to the office work and training. If pupils are kept pretty closely to work during the day they are not perhaps in the best of trim for attendance and work at evening classes; though, of course, according to the Smiles formula for getting on, there should be much burning of the midnight oil. There is no doubt but that the evening classes have proved an invaluable educational boon, and the day courses can never really take their place, or even enter into serious competition with them. But there must still be many to whom these day courses of instruction would be both possible and welcome. Therefore, we do not think the establishment of these courses will lack either appreciation or support. At any rate, the experiment is well worthy of trial, especially since the financial risk is covered by the following guarantors:—Messrs. Aston Webb, Arthur Cates, H. L. Florence, Waterhouse & Son, T. Baggallay, F. Hooper, Fellowes Prynne, John Slater, Lewis Solomon, Leonard Stokes, and David Seth-Smith. We only hope the meeting this evening will ratify the approval which the A.A. General Committee have already bestowed upon the project.

THE ARCHITECT AS ARBITRATOR.

AN important case dealing with the question of architects' certificates was heard before the Court of Appeal the other day which is specially worthy of note. The principal point to be decided in the case was whether the architect in measuring up the work acted as arbitrator between the contractor and his client, or simply and solely as agent for his client. Originally the architect in the case sued the client for his fees, whilst the client counter-claimed against the architect for loss resulting from the architect's negligence in measuring up, and thus causing the amount of his certificate to be larger than it should have been. The County Court judge gave judgment for the plaintiff on the claim and for the defendant on the counter-claim; but on appeal to the Divisional Court judgment was entered for the plaintiff both on the claim and counter-claim, their lordships being of opinion that the plaintiff could not be sued for negligence, because under the contract between the defendant and the contractor, he was, when measuring the material in question, acting as an arbitrator. The defendant appealed, and the case was heard by the Master of the Rolls and Lord Justices Collins and Romer.

Unfortunately the decision was not unanimous. The Master of the Rolls held that the architect acted in a judicial position as between the contractor and the defendant, and that therefore no action would lie for mere negligence apart from fraudulent or dishonest conduct. In this opinion Lord Justice Collins concurred. But Lord Justice Romer maintained that if a person undertook for reward to value or estimate for another work about to be done for his principal by a third party, he did not, so far as his principal was concerned, become an arbitrator in regard to his valuation or estimate merely because he knew that his principal and the third party had agreed that his valuation or estimate was to be taken as conclusive. He would still be acting for his principal, and so long as he was so acting, if he were guilty of negligence, causing damages, he would be liable to his principal in an action brought by him.

We think the decision of the Master of the Rolls and Lord Justice Collins is based on the proper legal view of the case. Because, anomalous as it may seem from the ordinary business point of view that the architect, after acting as agent for his client all through a contract, should suddenly take up a judicial position between client and contractor for the purpose of determining the amount due on the final certificate, yet, legally, this is precisely what happens. For the time being he becomes an arbitrator between the parties, and it is so specified in the contract between them. The architect has to see that the contractor is properly paid for all the materials supplied and work done, and that the client is made to pay no more than is justly due. That is, he is called upon to determine

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the balance of account between the parties, and in this way he ceases to be simply the agent of his client, and becomes to all legal intent an arbitrator.

A MODERN VIEW OF LONDON CHURCH ARCHITECTURE.—VIII.

By T. F. BUMPUS.

(*Continued from page* 91.)

ST. BARNABAS, Pimlico, finished two years later than St. Mary Magdalene's, will ever be regarded as one of the most historically interesting of the churches erected under the ecclesiological movement, while it shows a marked improvement on such earlier works

ST. BARNABAS, PIMLICO.
Before the erection of the Reredos, and the heightening o the Chancel Screen.

of its architect, Cundy, as St. Paul's, Knightsbridge, St. Michael's, Chester Square, and Holy Trinity, Paddington. Not only was it confessed, on its completion, to be a model of architectural excellence, but the most correctly and sumptuously fitted church erected in England since the Reformation. Raised at the time of the Papal Aggression in 1850, when any advance toward an improved ritualism was regarded by the majority with intense suspicion, the church, its fittings, and the mode of service performed therein, formed the subject of much litigation. Riots ensued, and for some time the building was in danger of being looted by the mob, who for successive Sundays during the latter part of 1850 and for some time during 1851 assembled to interrupt the services to such a degree that, had it not been for the intrepidity of the clergy and officials, the right to undisturbed worship would have been set aside.* It is perhaps to be regretted that Early English should have been adopted in a building of such small dimensions as St. Barnabas, its situation demanding a church in a style whose windows let in as much light as possible. There is, however, much excellent detail about the building, especially in the south porch, and the capitals of the alternately cylindrical and octangular columns supporting the nave arches. The interior, which is certainly more town-like in its ensemble than the exterior, seen under certain conditions of light, is very picturesque, especially since the erection from the designs of Messrs. Bodley and Garner, somewhat on the *motif* of a Spanish retabulum of a very sumptuous late Gothic Reredos, and by the formation in the south chancel aisle of a very ornate chapel, with screens and general details based upon studies of West Anglian Perpendicular for which Messrs. Bucknall and Comper are responsible. The windows throughout the church are filled with tolerable stained glass in the Mosaic style, by Wailes, and the entire edifice, with its ring of 10 bells, its organ, its fittings, and the adjacent college, must for ever stand as a noble monument of the pious zeal of its founder, Rev. W. J. E. Bennett, late vicar of Frome, Selwood, built as it was in a part of the district of St. Paul, Knightsbridge, containing a large proportion of poor. It is only to be regretted that in some respects the munificence of the founder was hardly seconded by the skill of the architect.

The appeal put forth by Mr. Bennett to his patrician congregation at St. Paul's, Knightsbridge, for the promotion of such a church as St. Barnabas—which, by the way, lying as it does between a college for the clergy on the south and a spacious apparatus of schools on the north, constitutes a very pleasing architectural group—was couched in language so forcible and pathetic that in 1846, two years after it was issued, the secular and domestic portion of this interesting group of buildings was ready for occupation.

A striking passage in this appeal ran thus:—

"The existence of this poor population now immediately around you depends entirely upon yourselves. You are the indirect creators of it. It is you that have brought them here, from the magnificent dwellings in which you live, and the horses and carriages which you keep, and the many servants whom you require to minister to your wants. Belgrave Square, Eaton Place, Chesham Place, and Lowndes Street, with others of the like grandeur and comfort of dwelling, is the cause of Ebury Street and Queen Street, and Clifford's Row and New Grosvenor Place, being filled with a population of poor men, women, and children—striving, labouring men, working from hand to mouth day by day to sustain life. . . . Come with me into the lanes and streets of this great city. Come with me and visit the dens of infamy, and the haunts of vice, ignorance, filth, and atheism with which it abounds. Come with me and read the story of Dives and Lazarus. Come with me and turn over the pages of the Holy Book, by whose precepts your lives are, at least in theory, guided. Then look at your noble houses, and the trappings of your equipages, the gold that glitters on your sideboards, and the jewels that gleam on your bosoms; then say within your secret conscience, as standing before the great and terrible God at the Day of Judgment: What shall I do if I give not of the one to relieve the other?"

St. Paul's, Knightsbridge, has been cursorily alluded to in these papers, but while on the subject of St. Barnabas', some details concerning the architecture of this, the Mother Church, may not be uninteresting. Begun in 1840, and consecrated May 30, 1843, it is one of several most unsatisfactory "Perpendicular" Churches, built in the Belgravian and Tyburnian quarters of the metropolis,

* Compared with the notorious riots at St. George's-in-the-East, ten years later, these disturbances at St. Barnabas, Pimlico, were very mild; still they were sufficiently alarming, for although there was in those days little of what could be called ritual, the preacher's ascending the pulpit in his surplice, and the lighting of the altar candles were sufficient to raise hisses and other tokens of disapproval. One Sunday morning (it was Nov. 17, 1850), at the conclusion of the sermon, a great uproar arose, but amid it all Sir Frederick Gore Ouseley, founder of the magnificent church and college of St, Michael at Tenbury, and who at the time of these disturbances was one of the assistant clergy of St. Barnabas, stood at the chancel screen with the alms dish quite calm and undisturbed. When, to-day, we visit St. Barnabas and its mother church of St. Paul, Knightsbridge, fitted with *instrumenta* of which their promoters never dreamed, it is impossible to repress a smile when we remember the futile efforts of half a century ago to "put down ritualism" in the Church of England. Forced to resign the living of St. Paul's, Knightsbridge, with St. Barnabas, Pimlico, at Lady Day, 1851, Mr. Bennett was subsequently presented to that of Frome Selwood, whose church, through his exertion, was magnificently restored.

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from the designs of Cundy. Externally the redeeming feature of St. Paul's was its western tower. Of really pleasing contour and proportions, it is only quite lately that the pinnacles have been removed from its summit, with the result that it now appears ridiculous. It cannot be always said of the present day architect, "Nihil tetigit quod non ornavit."

The plan of St. Paul's, Knightsbridge, was originally that of a pillarless nave, galleried on three sides, and a shallow recess for the sanctuary thrown out at the east

ST. PAUL'S, KNIGHTSBRIDGE.
Before the alterations by Bodley and Garner.

end, but enriched, as it has been from time to time under successive vicars, the church may now be pointed to as one of those numerous specimens of architectural deformity well corrected by religious taste.

During Mr. Bennett's incumbency the ameliorations effected in St. Paul's were made chiefly with the view of celebrating divine service with more decency and ritual propriety than was generally observed during the "forties," but, simple as these arrangements were, they gave rise to considerable litigation. They consisted chiefly in the formation outside the projecting eastern limb of choir stalls, and a more seemly arrangement of the altar and its surroundings. Mr. Liddell's tenure of the living, from 1851 to 1881, witnessed more striking improvements. During the earlier portion of it the six-light east window (since removed) was filled with stained glass by Wailes, those lighting the nave receiving their complement from the same hand a little later.

In 1870 Mr. R. J. Withers was commissioned to lengthen and to carry out sundry ritual ameliorations in the chancel, and *instrumenta*, consonant with its increased dimensions placed therein. Under the present vicar, Rev. Montague Villiers, the nave has been reseated and its walls decorated with tile frescoes, a chapel dedicated to St. Luke has been added on the south side of the chancel from the designs of the late Sir Arthur Blomfield, rich in decoration both mural and vitreous; a new organ by Willis has been erected, while the chancel has again been enlarged, its fittings renewed and an entirely new east end and window built by Messrs. Bodley and Garner. Towards this window, a five-light one, of character transitional between Late Decorated and Perpendicular, Lavers and Westlake have contributed some highly successful stained glass representing the Radix Jesse, and when a little colour has been applied to the walls and vaulting of the chancel its effect, seen through the tall rood screen with its crucifix and attendant figures, will be materially enhanced. Even in its present state, notwithstanding the architectural shortcomings of the nave, St. Paul's, Knightsbridge, presents an aspect of great religiosity reminding us of Pugin's churches.

(*To be continued.*)

NOTES ON CURRENT EVENTS.

NOW that the London County Council election is over, one of the first matters of business for the new Council to take in hand must be the question of a new county hall. The recent competition for the new Strand frontages included provision for such a building on the centre of the new island site in the Strand. But this idea is apparently overboard, and a site has been sought for elsewhere. The *Daily Chronicle* has good authority for saying that such a site has already been found and valued, and adds:—"When the scheme is disclosed, it will be found that the site is not on the line of route of the new thoroughfare from Holborn to the Strand, as it was believed would be the case, but is in a prominent part of Westminster. It is estimated that the cost of the new municipal buildings, including that of the site, will not fall far short of two millions sterling." Westminster is certainly about the most suitable locality for the new buildings. The next most important question is as to designs, and we trust that this may be made the subject of an open competition. The building will be of more than usual public importance, and such a competition should give opportunity not merely to a few specially prominent architects, but to other equally capable if less known men.

IN connection with the Queen Victoria Memorial, the committee appointed by the King recommend that a memorial be erected in the neighbourhood of the Abbey and Palace of Westminster or of Buckingham Palace; the memorial to include as its most prominent feature a statue of the Queen. This recommendation has been submitted to the King by Lord Esher (hon. secretary to the committee), and a sub-committee has been appointed to consider the means which should be employed to carry this recommendation into effect. Meanwhile Mr. Shaw-Lefevre has written to the *Times* advocating the erection of a "Victoria Chapel" on the well-known site adjacent to Westminster Abbey, and on the lines of the scheme proposed in 1887 as a memorial of the Queen's Jubilee, and for which the late Mr. J. L. Pearson, R.A., prepared a design.

THE Government will, before the session is very far advanced, the London correspondent of the *Manchester Guardian* understands, ask the House of Commons to vote a considerable sum of money towards the fund for the erection of a national memorial to the late Queen Victoria. The amount is not finally settled, but the probabilities, I am assured, point in the direction of £100,000. This of course will be in addition to the moneys raised by public subscription. In this connection it is interesting to recall that in 1862 the House of Commons voted £50,000 in aid of the fund for the erection of the Albert Memorial at South Kensington. This monument cost altogether £120,000.

THE Salford Corporation received 72 sets of designs in competition for the new St. Matthias Schools. These designs were referred to Mr. Royle, of Messrs. Royle & Bennett, architects, Manchester, as architectural assessor, to select not more than 10 designs out of the number submitted for the consideration of the committee. A sub-committee carefully examined these plans with the assistance of the Clerk to the Salford School Board, and eventually made the following awards:—1st. Plan No. 59; 2nd. Plan No. 29; 3rd. Plan No. 22. The envelopes containing the names of authors of these three designs were opened, and the names of the successful competitors were found to be:—Plan 59, Mr. Benjamin Bower, architect, Birmingham; Plan 29, Messrs. Woodhouse & Willoughby, architects, Manchester; Plan 22, Mr. Alfred H. Mills, architect, Manchester,

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FORTY-FIVE sets of designs were submitted in the competition for a joint isolation hospital at Devizes. Mr. C. E. Ponting was the assessor, and his award gave the 1st premium of £20 to Messrs. E. C. Isborn, Devizes, and G. Boughton, Ryde, Isle of Wight, and the 2nd premium of £10 to Messrs. Bell, Withers & Meredith, London. The committee have adopted the 2nd premiated design as the most likely to come within the amount they wish to spend.

FOR a Board School at Vickerstown, Barrow-in-Furness, the design of Mr. H. T. Fowler, Barrow-in-Furness, has been accepted in a competition confined to local architects.

THERE is to be a competition for a new free public library at Hawick. Premiums of £100 and £50 are to be offered, and the cost of the building, including furnishing, is not to exceed £7,000. If the author of either of the premiated designs is appointed architect for the work, the premium is to merge in his commission.

COMPETITIVE designs are invited for an illuminated clock tower, to be erected on the Strand at Torquay (Mallock Memorial). Messrs. C. S. Wollen and S. Bulleid, 1, Lower Terrace, Torquay, are the honorary secretaries.

ON Monday afternoon last the King paid a private visit of inspection to Westminster Hall, attended by Mr. Akers-Douglas, M.P., First Commissioner of Works, and Lord Esher, Permanent Secretary of the Office of Works. It is understood that His Majesty's visit had reference to the suggestion that the hall might be adapted for the purpose of any future opening of Parliament by the King, so as to avoid the unseemly crowding which marked the recent rush of members of the House of Commons to the bar of the Upper House when the Sovereign opened the Parliamentary Session.

AT a meeting of the Architectural Association on Friday evening last, Mr. E. W. M. Wonnacott read a paper on "The Paris Exhibition of 1900." Mr. Wonnacott, it may be remembered, won the Studentships Prize offered by Mr. Arthur Cates, F.R.I.B.A., for the purpose of visiting the Paris Exhibition and reporting upon the buildings connected with it.

SPEAKING at the fifty-eighth annual meeting of the Glasgow School of Art, the chairman, Mr. James Fleming, congratulating the school on its continued successful progress, remarked that the governors, of course, would have been disappointed had the school not made a great stride in advance in the new premises. "In connection with them there was no feeling of regret, they were entirely satisfied in every way with them as being thoroughly adapted for the work which was carried on in them." Referring to this appreciation by the chairman, Sir Thomas D. Gibson-Carmichael said he was delighted and surprised to hear that the persons who ordered the building were absolutely satisfied. It was the first case of the kind of which he had heard. However, they had not quite reached perfection, for the measurer had not yet finally reported. Nothing in this country prevented good buildings being ordered—he would not say being put up—more than the feeling that people did not know how much they would cost. If the Glasgow architectural students could be trained so as to do that they would be employed not only in this country but all over Europe.

IT is hoped that the King will consent to allow some of the interesting pictures in the various Royal palaces to be removed to the National Portrait Gallery. There are hidden away in some of the corridors and apartments at Windsor, rarely seen by the public, authentic portraits of many of his predecessors and of the celebrities of their reigns. At St. James's Palace, too, are some very interesting Tudor and Stuart portraits, whilst other interesting portraits of a modern period are stowed away at Balmoral and Osborne.

AT the wish of the trustees of the National Portrait Gallery, Sir J. C. Robinson, F.S.A., has consented to deposit on loan in the National Portrait Gallery an interesting bronze relief, containing the portrait of Sir Thomas Lovell, K.G., Speaker of the House of Commons in 1485, and Chancellor of the Exchequer to Henry VII., which was formerly affixed to the mansion built by Sir Thomas Lovell at East Harling, in Norfolk.

THE trustees of the National Portrait Gallery have accepted the following as gifts to the gallery, selected from the collection of theatrical portraits formed by the late Mr. Charles J. Wylie, and presented by Mrs. Wylie in memory of her husband: Anthony Leigh, Charles II.'s favourite comedian, painted at full length in 1689 by Sir Godfrey Kneller; Joseph Shepherd Munden, famous comedian, painted by G. Clint, A.R.A.; William Makepeace Thackeray, a full-length statuette, modelled by Sir J. E. Boehm, R.A.; and a small model of the monument to William Shakespeare in the church of Stratford-on-Avon, made by S. Brown in 1840. The trustees have also accepted the following portraits, as gifts to the gallery:—John Tyndall, F.R.S., the eminent natural philosopher and professor, painted by J. McClure Hamilton, and presented by Mrs. Tyndall. In this particular case the trustees agreed to suspend their usual rule as to the lapse of 10 years from the date of decease; Sir Francis Grant, P.R.A., painted by himself, and presented by his daughter, Miss Elizabeth C. Grant; the Rev. Charles Kingsley and Henry Kingsley, pen and ink drawings made and presented by Mr. W. S. Hunt. The trustees have also acquired, by purchase, a full-length portrait of Francis Bacon, Viscount St. Albans, attributed to Paul Van Somer.

CONSIDERABLE progress has already been made in the getting together of the loan exhibition of Spanish art to be opened at the Guildhall Gallery in April. Difficulty has been experienced in the acquirement of desired examples from Spain, and it has therefore been found necessary to send Mr. E. M. Borrago, the sub-librarian at the Guildhall, to Madrid, as a deputation from the Corporation to secure the examples if possible.

THE attractions of Leighton House have been enhanced by an exhibition of original black and white drawings by about 40 different artists in illustration of folk-lore and fairy tales. Many well-known artists are contributors, and the exhibition, which is in the "glass studio" of Lord Leighton's house, will remain open during March.

IN the sale of the collection of pictures of the late Mr. Hubert Martineau at Christie's, on Saturday, a work by J. Constable, showing Stratford St. Mary's, Suffolk, with mowers and donkeys in the foreground, fetched 720 guineas. A picture by J. Linnell, sen., representing a distant view of the Isle of Wight, realised 420 guineas, and one by P. Nasmyth, of a river scene, 460 guineas. "The Simplon Pass," by J. M. W. Turner, was knocked down at 215 guineas.

THE Glasgow School of Art, at the close of the session ending the 31st of August last, had 776 students enrolled, and the Government grant for the year amounted to £1,766 9s. 9d. Of the five British schools of art awarded gold medals at the Paris International Exposition of 1900, the Glasgow School of Art was granted one, and two silver medals were received for decorative art work shown at the International Exhibition of Women's Work, Earl's Court, London. The awards in the national competition, made in July last, were 5 silver and 21 bronze medals, with 3 Queen's prizes, 1 Owen Jones medal and prize, 25 national book prizes, and 8 special of prizes for sets of work, also 33 free studentships—in all 96 national awards.

WRITING to the *Times* with reference to the antiquities discovered in the sea off Cerigo, Lord Elgin says:—"The story of the loss of the *Mentor*, and the idea that some of the marbles that were on board of her may still be found in the sea off Cerigo, have made their appearance several times in my recollection. Perhaps you will allow me to mention that on the first of these occasions, some 30 years ago, I consulted the then keeper of the department of Greek and Roman antiquities in the British Museum

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(Mr. Newton), and that we were satisfied, after an examination of records in the Museum and in my possession, that the cargo had been recovered and brought to England. In any case, the present interesting discovery carries us back to another and more ancient disaster, for the bronzes of which it consists were certainly no part of my grandfather's collection."

THE opening ceremony of the Glasgow Exhibition is not to be performed by King Edward, but by his daughter, the Duchess of Fife. Meanwhile the presence of an epidemic of small-pox in the "second city" has occasioned some anxiety to the municipal authorities. During the past week 130 fresh cases were admitted to the hospital, raising the total number of cases in the hospital to 385. The number of deaths since the outbreak has been 134. The authorities are, however, confident that they have the epidemic well under control, and that there is not the slightest cause for alarm so far as the prospects of the Exhibition are concerned.

A LECTURE on "Why we go to Italy" was delivered before the members of the Edinburgh Architectural Association on the 27th alt. by Mr. Percy E. Nobbs, M.A., A.R.I.B.A. Mr. Nobbs answered the query by a descriptive account of a town in Italy and a general reference to the merits of Italian art. Much of the Italian art work, the lecturer pointed out, was of purely historical or antiquarian interest, the artistic qualities of which were often much over-rated, whilst on the other hand there was a lot of work which was not much known, and yet was of great value. Amongst other places and buildings of note referred to by Mr. Nobbs were the fine red brick buildings of Verona, with their stately campaniles; the Ducal Palace, and St. Mark's Cathedral, Venice, Florence and its Cathedral. Reference was also made to the works of Michael Angelo.

THE King is to assume the position and title of Patron of the Mark Degree, in connection with the Grand Lodge of Mark Masons. The Duke of Connaught has been elected Grand Master.

THE Council of the Iron and Steel Institute have decided to award the Bessemer Gold Medal for 1901 to Mr. J. E. Stead, of Middlesbrough, in recognition of the value of his researches in connection with iron and steel.

THE new London County Council is more progressive than ever. Going out with a majority of 24, the Progressive party have returned to power with a majority of 54. The new Council comprises 86 Progressives and 32 Moderates, whilst of the nineteen alderman, eight Progressives and two Moderates retain their seats. If the outgoing nine return as before—five Moderates and four Progressives—the balance of the parties will be: Progressives 98, and Moderates 39, giving a possible majority to the Progressives, on a division, of 58.

THE proposed new set of regulations which the eight metropolitan water companies had prepared for the prevention of the waste and of the misuse of water have been withdrawn in view of the strong and general opposition evinced towards them by the various local authorities, including the City of London Corporation, and the London County Council. Thus the Local Government Board inquiry came to an early and abrupt termination on the 28th ult., much to the distress of the *Times*, who laments that the opponents of the water companies could not properly understand and appreciate the disinterested benevolence of the water companies in proposing "measures for stopping or reducing the scandalous waste of water, which means in all years a waste of public money and in years of drought a grave danger to public health." Which remark shows just how much—or how little—the *Times* knows about the question at all.

THE Royal Commission on Sewage Disposal, appointed in May, 1898, are still unable to state with any degree of precision when their enquiry will terminate, inasmuch as some of the questions submitted to them can be properly determined only after careful and prolonged scientific research. Their secretary has reported to the Treasury that they had held 52 meetings, had taken the evidence of 87 witnesses, and had visited 22 sewage works. He added that under the direction of the Commission a large number of chemical and bacteriological investigations in relation to sewage disposal had been made by experts, and that a systematic examination of the land treatment of sewage was in progress.

BROOKLYN has in process of construction a church which is unique in that part of the country. Its walls and architectural ornaments are, observes the New York *Tribune*, one solid piece. It is a large building, and belongs to a wealthy and fashionable congregation, and the work of construction, which has already occupied more than a year, will be completed by Christmas. The material of the walls is concrete, "stamped" into moulds part by part, in such a way as to make the entire exterior a solid mass without a seam or joint. Concrete walls are not a novelty in the building trade, but the walls of the new church, which is to be called St. James's, are not merely of concrete. There is interwoven in them a mass of twisted iron bars, which bind the whole together, and, it is asserted, give the structure great strength and durability. It is also stated that the building is absolutely fireproof. The iron network buried in the walls follows the contour of the various openings, and so firmly supports even the slenderest parts that cracking and distortion, as the building settles, are considered to be impossible. The outer surface of the walls has been chiselled into a representation of cut stone. The roof is of slate. A feature of the square tower, which terminates in an embrasured parapet, is a series of animal head ornaments at the corners. It is said that the building is the first church of its kind ever erected in any of the Eastern States, but there are some small churches similarly constructed in the West, particularly in California, and these are stated to have demonstrated the excellence of the peculiar form of construction.

THE governors of the Peabody Donation Fund, in submitting to the public their annual report for the year 1900, state that the net gain of the year from rents and interest has been £36,197. The total fund on December 31 last amounted to £1,327,548. The capital expenditure on land and buildings to the end of the year was £1,290,047. The whole of the repairs for the year, amounting to £12,656, have been charged to income as formerly. At the end of the year the governors had provided for the artisan and labouring poor of London 11,439 rooms, besides bath rooms, laundries, and lavatories. These rooms comprised 5,159 separate dwellings, viz., 100 of four rooms, 1,770 of three rooms, 2,440 of two rooms, and 849 of one room. On the Herne Hill estate 12 blocks of buildings of 40 rooms each, besides laundries, lavatories, etc., are now in course of construction, and, it is hoped, will be ready for occupation by the end of the year. The average weekly earnings of the head of each family in residence at the close of the year was £1 3s. 1¼d. The average rent of each dwelling was 5s. 0½d. a week, and of each room 2s. 3¼d. The rent in all cases includes the free use of water, laundries, sculleries, and bath rooms. The birth-rate for the year reached 33·3 per 1,000, which is 4·7 per 1,000 above that of all London for the same period. The death-rate, including the deaths of 57 inhabitants of the buildings who were removed to hospitals, was 16·4 per 1,000, which is 2·4 per 1,000 below the average of London. The infant mortality was 150 in each 1,000 births, or 10·0 below that of London.

OUR ILLUSTRATIONS.

SOME ENGLISH CATHEDRALS.

WE give further reproductions of the very fine series of views of English cathedrals prepared by Mr. Montague B. Copland, of Whitehall, St. Ann's-on-the-Sea, to whom we are indebted for the loan of the negatives. As we said last week, they illustrate a paper recently read by Mr. Alfred Darbyshire, F.R.I.B.A., of Manchester, before the Liverpool Architectural Society.

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SOME ENGLISH CATHEDRALS.—II.*

BY ALFRED DARBYSHIRE, F.R.I.B.A.

(See Illustrations.)

WE must now hasten on to a consideration of the last period of Church Architecture, and which has received the name of Perpendicular. In other words, having passed through the ages of the *Foundation* and the *Growth* of English Cathedral architecture we approach the *Fall*. The cathedral-building ages are passed, and the last period is a mere struggle between the revival of Classicism and the tradition of the Old Gothic. Curvilinear lines give place to vertical and horizontal lines. The Perpendicular is an age of panelling and of debased and insipid ornamentation. The beautiful vaulted roofs disappear, timber takes the place of stone, and the old spirit lingers only in the fanciful fan-like vaulting of King's College Chapel, Cambridge, and Henry VII.'s Chapel at Westminster.

We will now visit Gloucéster for some specimens of this Perpendicular work. This cathedral affords, perhaps, the earliest example of Perpendicular work. This work is continued through a series of interesting objects, notably the cloisters, built about 1377 to 1412. The Great Tower 1450 to 1460, and Lady Chapel 1457 to 1498, almost the last years of Gothic Architecture. It is curious to note at Gloucester how this late Gothic work has been mixed with the old Norman, and in many instances actually casing it over. The cloisters illustrate the peculiar fan-spreading vaulting in the roof, of which we have already spoken. The South transept has a special feature of interest in its flying arch. Out of the cloisters projects an apartment which was used as the lavatory. This is an excellent example of a necessary adjunct to a monastic life. Along and under the windows is a trough, into which the water flowed. The roof is vaulted, and in the opposite wall is a recess for towels.

Henry VII.'s Chapel at Westminster Abbey is an excellent illustration of the characteristics of Perpendicular Gothic: in fact, it is a typical example.

The Cathedral Age was succeeded by the Parish Church Age, and we cannot do better than conclude our Review of the "Periods" than by an illustration of the Manchester Parish Church, now restored, and in a great measure rebuilt to suit its more dignified appellation of Cathedral.

Having thus endeavoured to explain the main distinctive features of Cathedral Architecture, we will proceed to notice the many beautiful pictures which Mr. Copland has still to show; and we will commence, as in duty bound, with the seat of the Primate of England—Canterbury Cathedral. This Cathedral dates from the Norman Conquest, and is a history written in stone of every age from that period down to and even beyond the Reformation. On its site had originally stood a church of British Christians. This was restored after the Roman Conquest by Augustine. To Lanfranc, the first Norman Archbishop, and Conrad, we are indebted for the most part of the designs and some of the work at present existing. Here, in this church, you will remember that Thomas à Becket was murdered in 1174. This event has rendered Canterbury an object of interest, and pilgrims to this day visit the shrine. The crowning glory of the Cathedral is in its central tower, which dates as it how stands from about the end of the 15th century. It has been said of this tower "That it would be impossible to find its equal in England, difficult in the world. It is a marvellous construction of grandeur and grace." It is 235 ft. high.

After the destruction of Conrad's Choir by fire, the responsibility of building another on the same designs was entrusted to a Frenchman, William de Sens; he carried on the work from 1174 to 1178. An Englishman succeeded him, and completed the work in six years. Therefore the stone-work of this choir is over 700 years old. The style is Early English, with some Norman features, and the whole effect is most imposing. Throughout the cathedral are the tombs of many of the Archbishops, mighty men of bygone generations, and of some of the sovereigns of England. Indeed, you cannot change your position in any part of it without either touching or looking upon something which is a history of the remote past.

The nave of Lanfranc's Cathedral, which covered the same ground as that now existing, had in 1378 fallen into a ruinous condition, when Archbishop Sudbury issued a mandate granting forty days' indulgence to all contributors towards its rebuilding. This work was continued by two of his successors, and therefore dates from about 1380 to 1411. The style is a Late Perpendicular.

Between the two first piers in Trinity Chapel, on the South side, is the Monument of Edward the Black Prince, the flower of English chivalry. The Prince died on Trinity Sunday, June 8th, 1376, hence the name of the chapel. This tomb is the most authentic memorial of a long line of English heroes. The effigy is in brass, and was at one time entirely gilt; at the feet is a leopard; above are suspended the brass gauntlets, the helmet lined with leather, the shield of wood, with the heraldic charges carved out of leather, the velvet surcoat charged with the arms of France and England quarterly, and the scabbard of the sword. A few months ago an heraldic exhibition was held at Burlington House, under the auspices of the Society of Antiquaries. By the kindness of the Dean and Chapter of Canterbury these precious relics were lent for the inspection of members, together with the shield used by Henry V. at Agincourt, lent by the Dean and Chapter of Westminster. This close view of these symbols of mediæval warfare revealed the fact that the Lions and Fleurs de Lys were most exquisitely modelled, and a perfect expression of that Edwardian Gothic Art we have before alluded to. The sight of these things was very pleasant, and the touch of them sent a thrill of excitement through one, as the glories of Cressy and the heroism of Agincourt rose in mediæval splendour before the imagination. Verily these precious relics are historic evidence of that prowess and valour which have tended materially to make this little country honoured and respected among the nations.

We now visit the fair capital of the South-West, and about midway down the historic High Street of Exeter we turn into the picturesque and quiet Cathedral Close, and find ourselves before the West front of the cathedral. This is the latest work of Bishop Grandison, who died in 1369. The screen with its sculpture is of later date, and was completed in 1399. It would be a hopeless task, in the time now left to us, to attempt a detailed description of this screen; suffice it to say, therefore, that it affords a picture of kings, warriors, saints, and apostles, and crowned by the figure of St. Peter, the patron saint of the cathedral. To antiquaries this screen is a rich storehouse of the costumes, armour, and regalia of the time of Richard II.

We will enter the nave, and take a view from the West end. The length of the nave is 140 ft. It is an example of Decorated work. The beautiful vaulted roof extends the whole length of the church from West to East, and is not excelled in beauty by any other example, either in this country or on the Continent. Passing under the screen we enter the choir. This interior is a beautiful example of Gothic Architecture. The delicate and numberless pillars clustering together for the support of the vault (always a beautiful illustration of a beautiful thought), the power resulting from union, seems to particularly arrest our attention in Exeter Cathedral. The chief thing that meets the eye is the Bishop's throne of richly-carved woodwork, rising in spiral form to a height of 52 ft. It was erected between 1466 and 1478 by Bishop Boothe.

Our series of pictures would not be complete without some specimens from Wells Cathedral. The City of Wells takes its name from a spring called St. Andrew's Well. Athelm, a monk of Glastonbury, was the first Bishop of Wells in 909. The present cathedral was commenced by his successor Wolfelmus about 924. The see was at one time transferred to Bath; this caused much offence and many quarrels. Ultimately, however, it was settled by the title being vested in the Bishop of Bath and Wells, as it remains to this day. The West front is considered one of the finest façades in Europe. It is adorned with a vast variety of figures of apostles, kings, popes, bishops and cardinals, and is the work of Bishop Joceline between 1206 and 1242.

* A paper recently read before the Liverpool Architectural Society, and in a large measure explanatory of the beautiful limelight views prepared by Mr. Copland.

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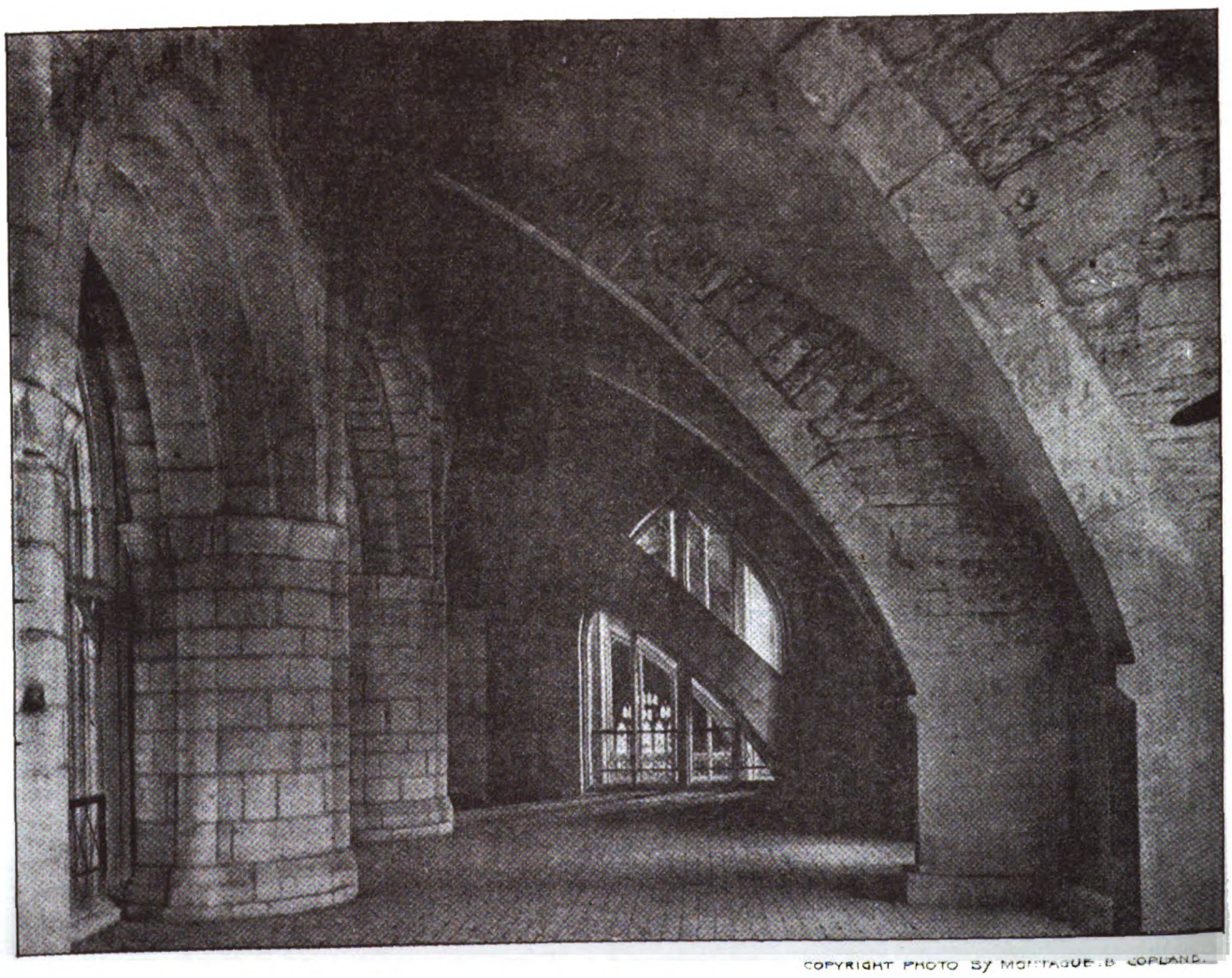
GLOUCESTER



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ON ENGLISH CATHEDRALS
By A. DARBYSHIRE F.R.I.B.A. Nº 3

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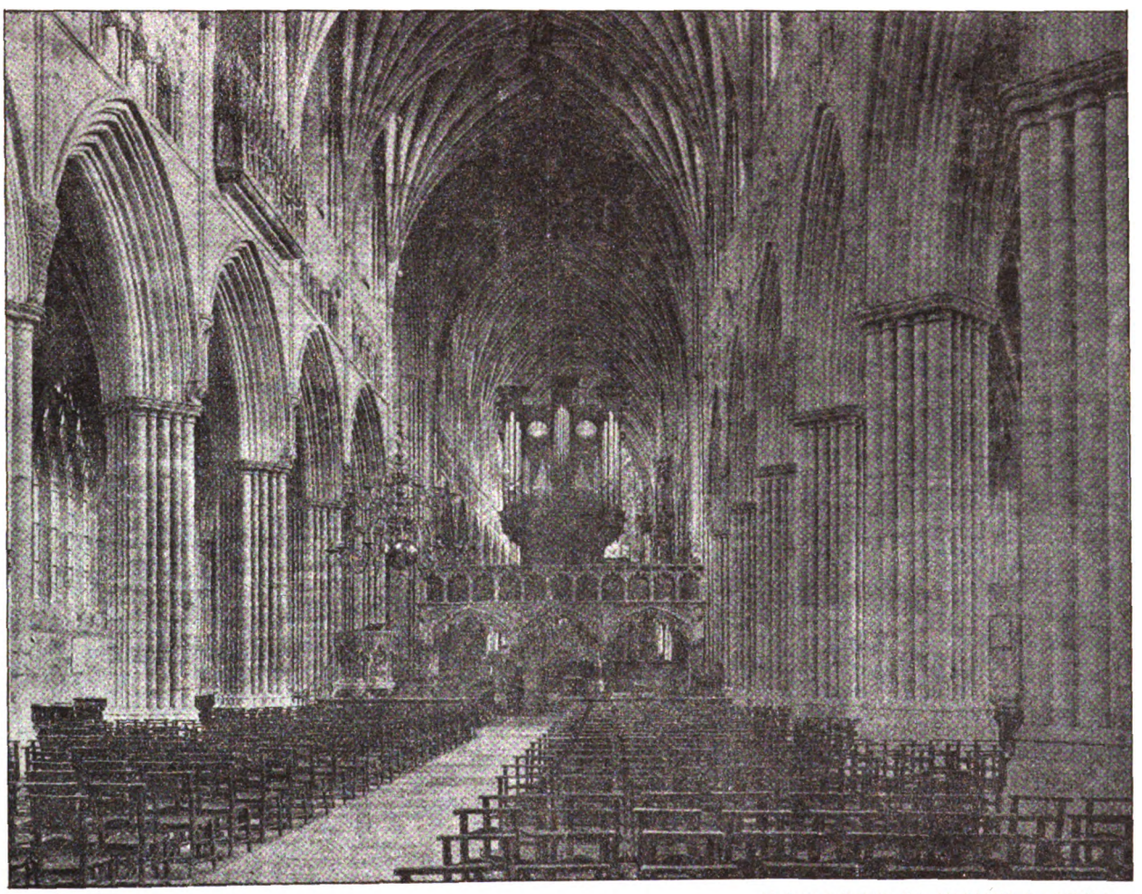
HEREFORD



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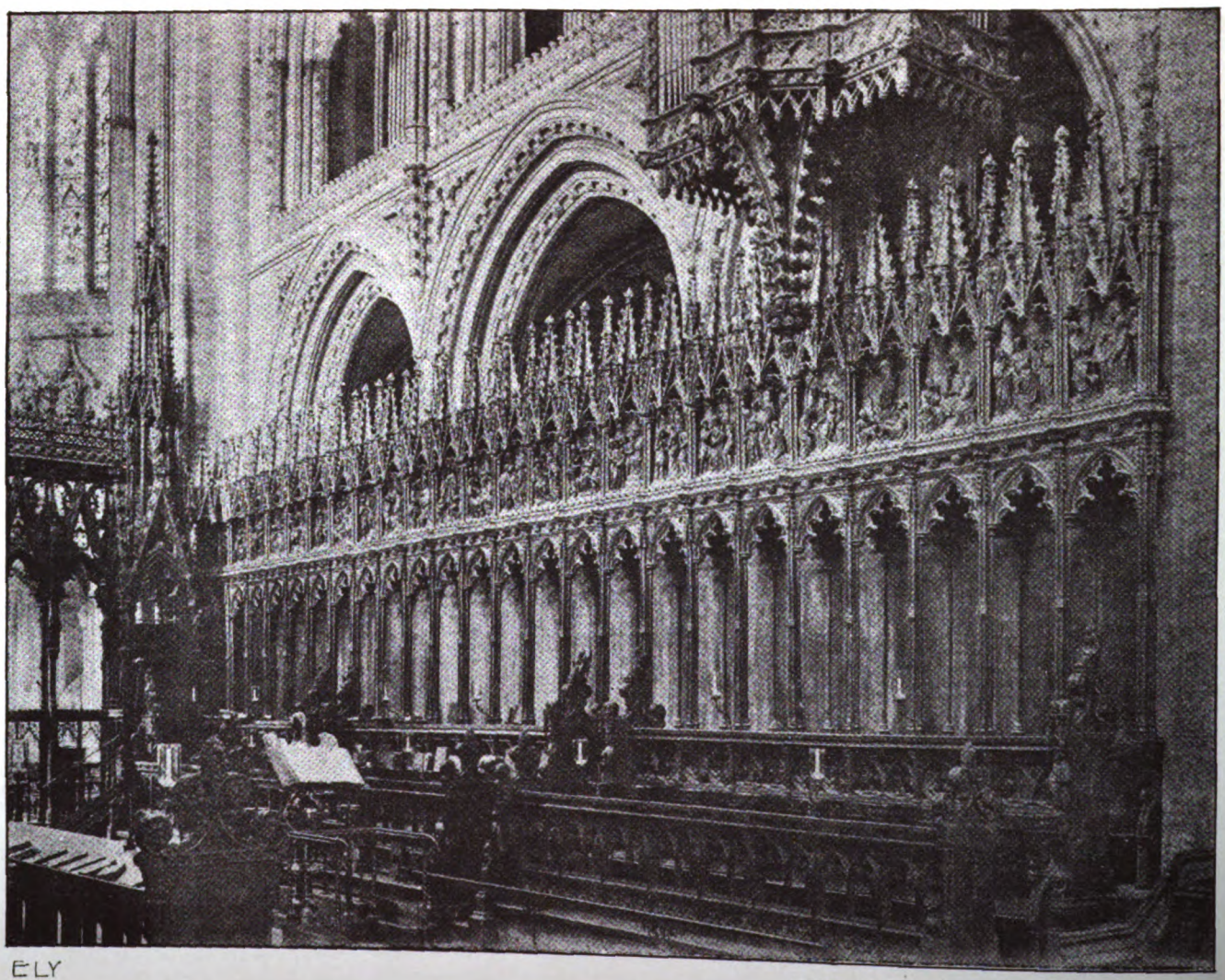
SALISBURY



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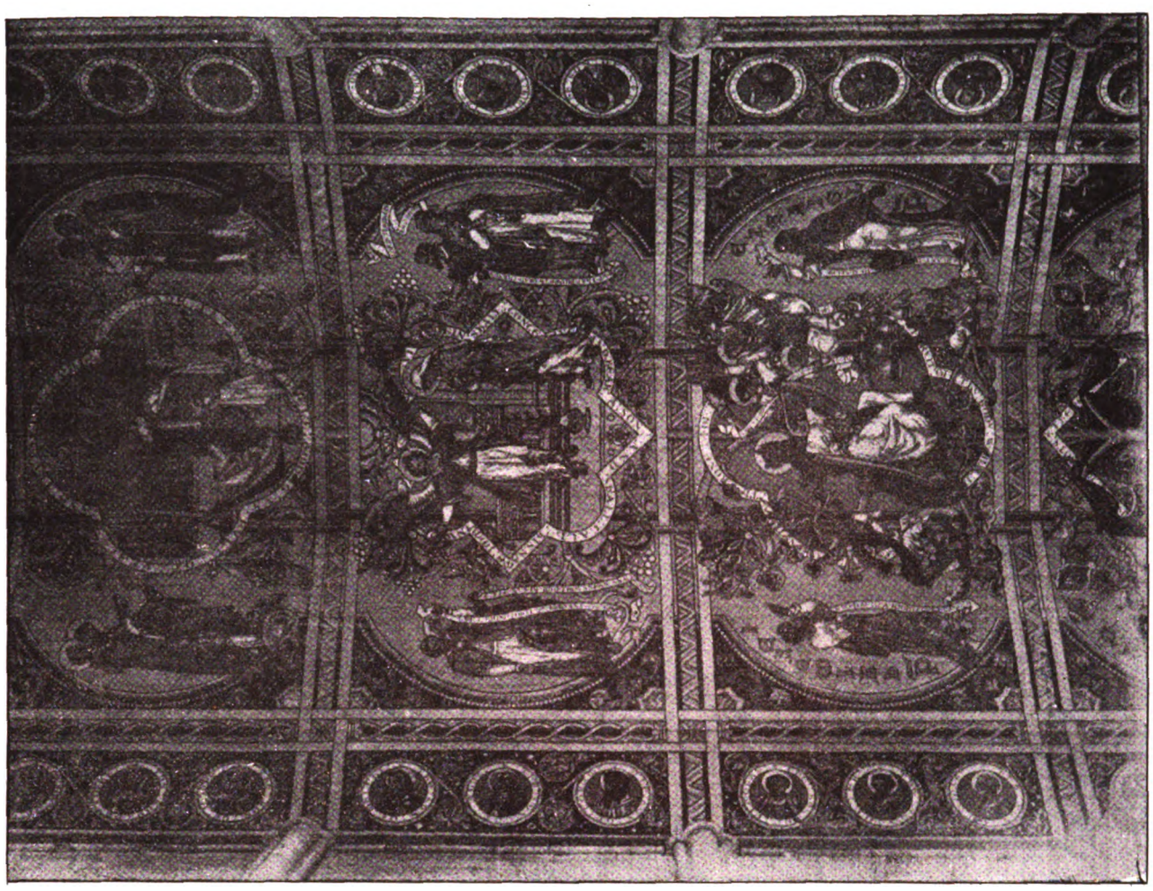

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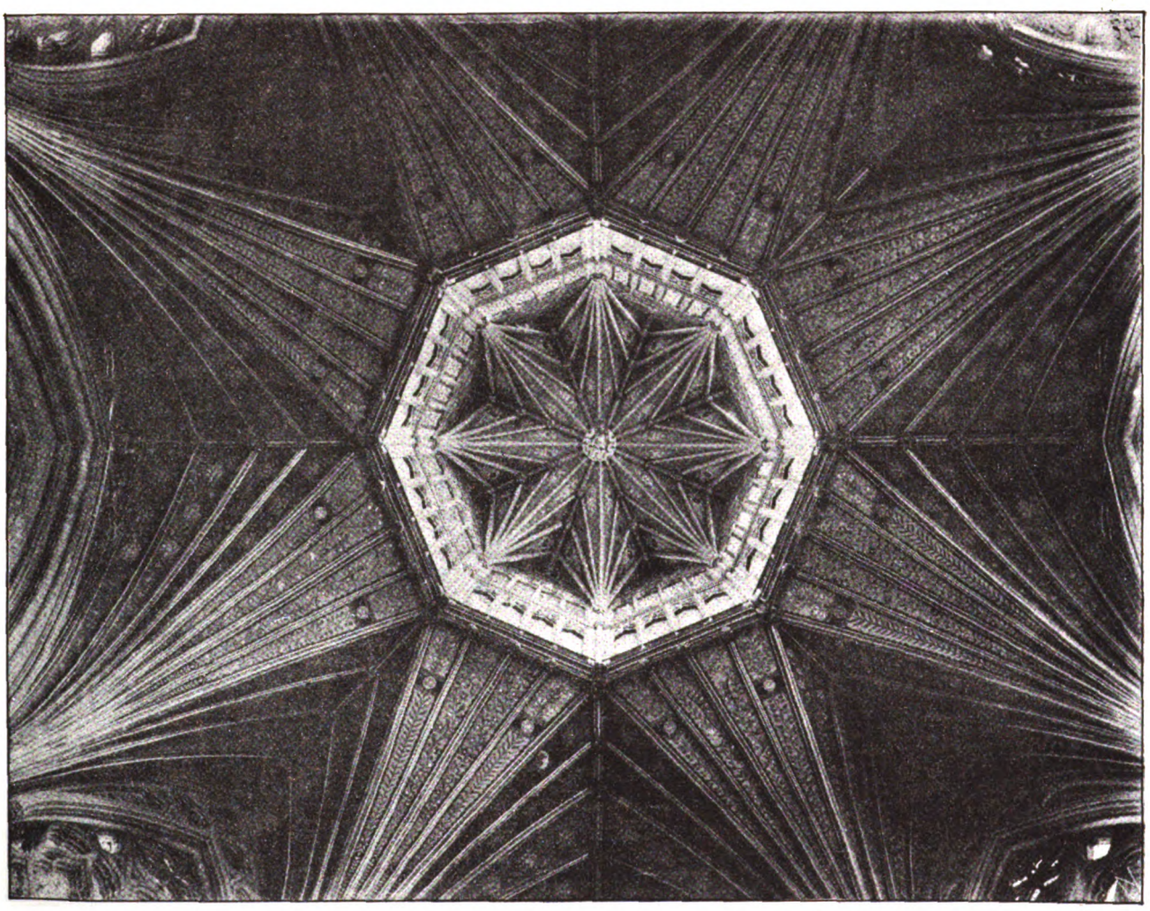

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ON ENGLISH CATHEDRALS
By A. DARBYSHIRE F.R.I.B.A. Nº 6.

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A curious feature of the nave is the large inverted arch, suggesting the idea of St. Andrew's Cross. Towards the end of the 14th century it was thought that the weight of the Central Tower would prove too much for its foundations, and, in order to counteract a probable catastrophe, this curious device was resorted to.

Although Southwell has only recently been raised to an Episcopal See, we will take a hasty look at some portions of this interesting building, and note the round arched work of the Normans. An interesting feature of Southwell is the style and character of the carving of the Decorated Period. Nothing in this country exceeds the beauty and minuteness of this carving. Conventionality has disappeared, and natural beauty is reproduced in stone, with such care and finish that the material seems to have been like clay in the potter's hand.

We shall conclude our exhibition of photographic pictures by a series of views from the Cathedral of Ely. The History of Ely dates from Queen Etheldreda, who founded a religious house in 673, which was burnt by the Danes in 870. Two centuries later it came under the Norman influence, when buildings of wood and rough stone gave way to those which have some pretensions to architectural character. From the first Norman abbot installed in 1082 succeeding abbots and bishops left a proof of their existence and of their ministry in the various additions to the cathedral until it reached its present appearance. Ely may, therefore, be looked upon as a museum of English architecture, containing specimens on a large scale of the different periods of which we have spoken this evening.

Ely Cathedral, which measures 537 feet from the exterior of the West porch to the exterior Eastern buttresses is one of the longest churches in Europe, although others (as, for example, the Cathedral of Milan) cover much more ground. Owing probably to its situation, no very important town ever arose around the monastery. Other English cathedrals form only a part of the cities in which they stand; here the cathedral is the fact of the town; and nowhere else in England is there so complete and suggestive a picture of what a great monastery, such as Glastonbury or Melrose, must have resembled whilst its buildings were yet entire, and its church formed a land-mark for all the surrounding district.

The West front is a mixture of all the styles of Gothic Church Architecture. The West tower, built by Bishop Geoffrey Rideal 1174-1189, was, no doubt, intended as a central feature of the West front, the left wing of which has never been completed. The most remarkable feature of Ely Cathedral is the octagon tower or lantern which rises at the intersection of the choir, nave and transept. Perhaps this is the most beautiful and original piece of design to be found in the whole range of Gothic Architecture. It took the place of the Norman tower which fell down. It was completed as high as the upper string course in 1328. The vault and lantern are of wood, and were finished in 1342. "This octagon forms the only Gothic dome in existence, though Italian architects have done the same thing, and the method was in common use with the Byzantine builders."

Entering the choir we may note that the three Western bays are considered the best "decorated" work in England. The stalls were commenced in 1338. The panels are filled with modern sculpture in wood. Passing into the nave, we note here again the Norman work with the "cushion" caps we have before mentioned. The roof is painted by a modern artist, Mr. Le Strange, and was finished in 1861. The Prior's door is an interesting specimen of Norman work just before the advent of the Early English.

There are a couple of Chantry Chapels in Gloucester, the first being dedicated to Bishop Alcock. The date of this is 1416 to 1501, and is of the last or "Perpendicular" Period. This Bishop was Controller of the Royal Works and Buildings under Henry VII. The roof of this chapel is an interesting example of the fan-like vaulting we have before alluded to. The exterior of Bishop West's chantry at the end of the South choir aisle dates from 1515 to 1534. A still later example, and showing signs of that Italian Renaissance which swept over this country in the reign of Henry VIII.

This chapel may be regarded in the light of a last dying speech and confession of that beautiful Gothic art, a brief consideration of which has occupied our attention this evening. We may allow this view to conclude our exhibition of photographic pictures. After what Mr. Copland has shown on the screen, I think you will agree with me that Gothic Architecture is a thing of which Englishmen may feel proud. It is a certain fact that for the true history of art we must look to the religious faiths of the world. From the earliest ages, and amongst all nations, whether Pagan or Christian, architecture was the medium of the highest and noblest external expression of religion. Man has done much that is noble and beautiful in the erection, decoration, and elaboration of his dwelling, his places of amusement, and in his civic edifices; but it is upon the temple of his God that he has exercised his greatest engineering and constructive skill, and upon which he has lavished his best and his grandest art.

There is nothing in the history of art so beautiful, so truthful, and so majestic as a Gothic cathedral. Even if you do not understand the principles upon which a cathedral was realised, you feel a sense of awe and veneration as you pace its sacred aisles: it is full of a mysterious atmosphere through which the slender shafts penetrate till they are almost lost in the network of the vaulted roof, and our thoughts are carried away into a contemplation of the Infinite. The carved angels look down, and you picture the heavenly host; the spires overhead are pointing heavenward, and one leaves the sacred precincts with a knowledge that the place is holy.

Let it always be borne in mind that the Gothic Architecture of our cathedrals has an individuality distinct from the Gothic of other countries. It has maintained this individuality from the moment it took root in the soil. It is pure in thought and refined in conception; it is truthful and beautiful exceedingly. Truly the old mediæval builders have left a legacy rich in honesty, truth and beauty, for—

> "In the elder days of Art
> Builders wrought with greatest care
> Every minute and unseen part;
> For the Gods see everywhere."

THE PRESENT CONDITION OF THE BUILDING INDUSTRY.

A PAPER on this subject was read at the Surveyors' Institution, on the 25th ult., by Mr. Thos. Blashill, F.R.I.B.A. Mr. Blashill early in his paper dealt with

THE ARCHITECT'S RELATIONSHIP TO HIS CLIENT.

Remarking upon the difficulty architects often experienced in arriving at a clear and definite understanding of a client's wishes and wants, and so embodying them in drawings that he (the client) understood what he was getting for his money. But no pains were too great to ensure that he did, and a young architect could scarcely have a worse reputation than that of exceeding his estimates. Still, the architect must act fairly between the client and the contractor, especially in view of the fact that many persons, whether in their private capacity or as members of public bodies, thought it fair to take every advantage of the contractor, and expected the architect to asssist.

None but builders of good reputation should be allowed to tender; it was practically impossible to convince a committee, on the clearest evidence, of the unsuitability of a particular builder if his tender was the lowest. Subletting by the contractor was properly discountenanced when there was danger of his losing control of the work, or of introducing a person whom the architect might have reason to distrust, or of lowering the quality of the work. But, on the other hand, it was a very risky practice to introduce into a contract a great number of special works for which the architect had made arrangements with other parties whose tenders he put down in the specification, stipulating for the general contractor to adopt these parties as sub-contractors and pay them the amounts of their tenders.

It was said that the secrets of trade lists and discounts could not be penetrated by the architect, and that the system could not be altered. If that were so the architect should cut the knot by demanding to know the lowest price to a safe cash customer, or, if that were inconvenient, should keep the reins in his own hands and see that a sufficient profit, and no more, was allowed the contractor. The worst feature in the system of discounts was that they furnished a fund from which secret com-

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missions could be paid to persons ordering particular goods for their client. The best course was to let the contractor make, or buy, and fix everything that could be safely left to him.

The modern builder on a large scale should have a fancy for machinery and be ready to seize on improvements. So far as practicable improved conditions of labour in the shop were being applied on the building, but it was not certain how far in London this was due to native smartness, or the example of Scotland and the North, or the pertinacity of American inventors. In discussing the English builder of to-morrow it was impossible to ignore the work of the American builder of to-day, who was a constructional engineer. With us a first-class City building might rise at the rate of one storey in three weeks; a New York building of which a model was shown in the Paris Exhibition, shot up through its ordinary and plainest storeys at the rate of two storeys a week, and in the artistic upper and lower storeys the rate could not have been slower than one per week.

BUILDING OPERATIVES AND "THE DAY'S WORK."

Mr. Blashill referred to the depressing effects of time-wages, and the fixity of position of such men without reasonable expectation of betterment while craftsmen, and with no assurance of a comfortable provision against old age. The trade union was a natural engine for accomplishing what the isolated craftsman could not bring about for himself. In regard to the prevention of sweating, questions between payment by time and payment by results played a leading part. Not that in the eyes of the workman there was anything specially sacred in either; there were now far more men, trade unionists, paid by the piece than by time, and payment by piece was as stubbornly fought for in some trades as payment by time in others.

What really was the fair day's work of which the fair day's wage was the equivalent? "Labour" was often confused with "time," with mischievous results. Not workmen only, but the rest of us, got into a habit of talking about our "time" as if it were something valuable by which money ought to be made. But mere time was worthless to any one except the owner, if even to him. What the employer really bought was so much improvement to the material he put before the workman as might reasonably be expected to be done in the time by which the payment was calculated. This was simply measurement by the town clock instead of by the 5-foot rod, and if a day's work were a fixed quantity the clock would measure it as accurately and much more conveniently than any scale of feet and inches. Yet, on this side the Atlantic, no workman, no employer, no public authority had seriously attempted to apply in our own industry any kind of measurement, even the rudest, to the "day's work" itself. Surely the Chicago plumber's method of declaring how much he would do in seven hours and then claiming the right to do it in five with seven hours' pay was in principle honest and fair. The desire to have an easy time was common among time workers of every class, but a more serious matter than mere idleness was the deliberate loitering of which employers had long complained.

There was also the important question of work lost to trades by changes in modes of construction, apart from the policy of employers or employed. Thus, the demand for fire-resisting construction had already affected the carpenter very seriously. Mason's work, which for a time recovered its place after a long struggle with imitative cement, had now to compete with cut-brick work and terra-cotta; it was said that this change was due to a masons' strike. In the case of the plasterer, such disputes were dangerously interesting. There were a dozen substitutes for plaster—none perhaps quite satisfactory, but a single architect was now using one of them by the acre—and he had let slip the artistic and interesting branch of his work. On brick-work, which seemed least liable to be supplanted, concrete was encroaching fast—concrete that just failed to become a dangerous substitute 20 years ago when brick work was hardly more than half its recent price.

EDUCATION IN THE BUILDING TRADES.

Apprenticeship of the old pattern, in which the youth was bound for seven years, during two or three of which he learnt very little and was of little use, was vanishing with other mediæval customs. The workmen had deemed it necessary for their own protection to limit much more stringently than formerly the admittance of apprentices; indeed, in some trades it was practically impossible to get a boy apprenticed unless he was the son of a man in the trade. The position of the building operative had been improving, and there was no reason why he should not, like the poorly-paid French artisan or the doubly-paid American, leave his work at night in a condition, as to dress and general appearance, good enough for any company into which he might care to go. We were as yet only at an early stage in technical education; at present it was necessary to see that public money was spent only on such as had actually entered their trade, but this was not a rule without exceptions, and the knowledge of tools and processes must very soon become as common as the knowledge of arithmetic.

In conclusion, Mr. Blashill asked why all those engaged in the building industry should not learn the different crafts that composed it in the same school and at the same bench, at least so far as they had to travel together. The workmen would leave comparatively early in the journey and the rest at stages which preference or necessity might dictate. But so far as they might journey together they would be learning the very same things. They would understand each other for the rest of their lives, and, if one who might have started with lower ambitions, should find his way into the higher grades of the industry, it was not the class to which the speaker belonged that would begrudge him the success he had earned.

SOME ARCHITECTURE IN CRETE AND TURKEY.*

BY D. T. FYFE.

(*Continued from page* 123).

II.—TURKEY.

THE second part of this paper, dealing with some Turkish work at Broussa, follows somewhat naturally from the first; as after an examination of the mosques at Canstantinople, one feels, as in Crete, the readiness of the Turk to adopt the indigenous architectural forms in the territories of his conquests. The work of the Osmanlis at Broussa, however, is earlier and more representative than any found at Constantinople, and holds an isolated position in Turkish art, somewhat similar to the *Cinque-Cento* in the history of the Italian Renaissance. The intricacy in the developments of Eastern work is manifold, but in the vast web of Saracenic styles the growth of what might be called the Renaissance of Turkish architecture is at least clear and distinct. The beginnings are to be found in Asia Minor, in those large and suggestive and often very beautiful remains of the Seljouk domination. It may be said that this pointed work of the Seljouks bear most affinity to Persian work, on which, as far as I know, it was directly founded. The work about which I wish to speak begins with the era of the Broussa Sultans, when Mourad, Bayezid, and Mohammed—all first of the name—built the chief mosques of Broussa. Founded, as it was, on what the Seljouks had done before, this work seems to have, in addition, some large and common-sense individualities. The typical two-dome plan, which Texier observes is not found at Constantinople at all, is best seen here in the Mosque of Mourad II., the Mosque of Bayezid I., and the Green Mosque, or Mosque of Mohammed I. It is of this last, and of its *Turbeh* adjoining, that I wish specially to speak.

The two-dome plan, in its completeness, has an open porch, or loggia, of the whole width of the entrance front and this feature can be seen in the Bayezid and Mourad Mosques. The Green Mosque, however. was left incomplete, and the porch was never added. It would be interesting to know whether the great canopy of the entral doorway belongs to the original period, or was added later. The mosque was built in 1420, and one hardly looks for such big, say *Michelangelesque*, detail in Anatolia at that time. In exterior disposition the mosque

*A paper read before the Architectural Association on the 8th ult.

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is uniformly of two stories, finished with a cope, over which is a low-pitched roof. At the entrance end are two minarets, originally covered with green *faïence*, and evidently reconstructed since the earthquake of 1855. The exterior, generally, is all marble surface, and has exquisite carving at the doorway, windows, and niches. The doorway is a particularly fine piece of design, both in proportion and detail. The plan, in essentials, I can answer for as being reasonably correct, though there is no scale. As yet I have seen no publication of the plan of this mosque. Recollect, in this connection, the caution that is necessary in Turkey when taking notes on a casual visit, and do not judge hardly of these meagre sketches. The thought displayed in this building is its essential quality, and this one may realise without elaborate means. The adjoining *Turbeh*, or tomb of the founder, is one of the most delicious creations imaginable. The lower part of the exterior is of white stone, with large panels of bright blue-green tiles. The upper part is painted light green, and it is finished with a domical lead roof. It is of large scale, as can be seen from the figures in the photo of the entrance. The sketches exhibited were from memory, and, as in the case of the mosque, have no scale. The following notes concerning both these buildings were taken on the spot. Beginning with the *Turbeh* first. "Outside, the mouldings are large and simple, and the side allows for great breadth of scale. There are ornamented tiles over some of the lower windows, and panels of same above these. The doorway is a fine piece of colour, painted, not tiled, and over the doorway is a good, simple, stone-moulded hood. The plan of the building is an octagon, with a range of large lower windows occupying six sides, the *mihab* and door, opposite each other, being in the other two. There are two ranges of upper smaller windows, the highest being just below the springing of the dome, in that deep band of slightly projecting corbelling, triangled out, which occurs so often in Turkish domes. These top windows are stained glass, the others plain; but the light coming from the lower ones is subdued, as the wall is very thick, and the straight ingoings catch a lot of light. The interior defies description. A rich blue-green dado of hexagonal tiles, with a border at the floor and ditto at top, runs right round to a height of about 10 ft. It stops against the doorway and *mihrab*, and the windows are set in it with independent borders. At the sides of each window, about midway up the dado, is an ornamental spot of tiling. At the broader *mihrab* and door there is only room for half of this. All is white plaster above the dado, except for a little centre flower painting in the dome, not of much account. The stone floor has an octagonal centrepiece, raised one step, and ornamented with tiles on the edge. Above this, again, is a square tiled platform, about 18 in. high, for the bier. This platform has a vertical design of tiles of great beauty and exceeding richness of colour—a perfect harmony of blues. The *mihrab* has some exquisite work; in fact, it is full of the most delightful detail in form and colour. The small round pillars, covered with *faïence*, and the centrepiece over the pointed niche-head, are specially noticeable. In the latter one notices the delicacy and beauty of the contrasts between the main ground colours; pale mauve competes with a light blue-green, helped by a judicious balance of white and green-yellow. There is an immense amount of study in the floral patterns. The lighting is perfect." Leaving the *Turbeh*, we come to the mosque. "Outside, certain windows have a thin blue strip of tiles, 2 or 3 in. wide, inside the architrave. This has a good effect in combination with the white marble. The interior, considering its size, for bigness and beauty and rest, impressed me more than almost any I know. It is on the two-dome system, and quite successful, owing to some simple expedients. (1) The entrance-domed hall has two side-spaces opening off it, roofed with hexagonal domes, and with floors raised above centre level, which gives the entrance a breathing room that is particularly valuable. (2) The floor of the inner domed hall is raised some 2 ft. 6 in. clear drop above the other, with a small centre stepway only. (3) There is a *flat* marble arch between the domes, which is good, as it doesn't exclude too much light, or separate the domes too much. (4) There is a small octagonal fountain under the outer dome, which helps it to be more obviously an entrance to a higher shrine. (5) There is a circular top light over this dome, so that the inner dome, being darker, has more of an air of mystery. All the richness of tile decoration (and this part is quite as fine as the *Turbeh*) is concentrated on the doorway, side recesses and upper gallery, so that the entrance end is bright and cheerful, yet with an air of quietness about the side niches of the door; the inner part is plain, sombre, and tomb-like. Yet with all the accessories the two are so perfectly joined together that there can be no question as to their being one building. Standing in front of the dais, looking back to the door, one notices the fine effect of the subdued light in the rich tile work there, all in a beautiful scheme of blue. There is a dado in this building as in the *Turbeh*, but not so fine; the colour is a plain dark green. There is nothing particular about the *mihrab* and *minber*."

The lighting arrangements of this mosque are most instructive for study: there are three small windows in each of the main domes, at the springing; and the side domes have each six similar windows. The other windows, shown on the plan, give a subdued light as in the *Turbeh*. The gallery on each side of and above the entrance is a most interesting feature. It is shown, to some extent, in the photo, but its plan is by no means clear to me. Undoubtedly it bears some resemblance to the similar feature in the Mosque of Mourad II., of which Texier has a plan.

Other most interesting mosques in Broussa, besides those already mentioned, are the *Ulu Jami*, or Great Mosque, the Mosque of *Emir Sultan*, and the Mosque of Mourad I. at *Tchekirgeh*. The former is a very large building, more like a bazaar than a mosque, and quite dominates the general view of the town. It is of large simple-pointed work, with two tall minarets and a forest of domes. It is finished in stucco, like most of the Constantinople mosques, and this poverty of material contrasts rather unfavourably with the Green Mosque, which is finished with marble both outside and in. Some very good brickwork is also to be seen at Broussa—in the exterior of the Mosque of Emir Sultan, and in the various Turbehs at the Mosque of Mourad II. The type of entrance loggia which was so common here, and which was continued as a feature in the Constantinople mosques, may be well seen from the Mosque of Bayreid I.

In considering the conditions of the problems presented to us by these Turkish buildings, we can learn by seeing the use the builders of them made of their materials to hand *in toto*; that is to say, of conditions of climate and religion, as well as hard, matter-of-fact forces of everyday design; and following from this, by the good old lesson on the justification of apparent eccentricities, common to some form or other to every period of architecture. What strikes as boldness in a design, when we come to analyse its constructive meaning, may appear simplicity itself when the effect as it stands is only taken into account, and unworthy of any except admiring notice. For example, stripped of its effects and considered on plan, the corbelling out of the main domes of the Green Mosque on three sides only may appear freakish, but in reality it serves to make one interior of the two domes, especially as softened by the beautiful form of corbelling adopted by the Turks and all Saracen races. The fact, too, in the same building of a higher shrine inferior in cheerfulness to the lower entrance part seems peculiar on the face of it, apart even from any religious motive; but when we see that this effect is balanced by a stately gravity in the design of the entrance wall, and, moreover, is quite reasonable in itself from an æsthetic point of view, we realise a something here which gives a sense of fresh perception, and, as such, is, of course, of the highest value. The sense of strangeness in contemplating Eastern buildings at the first rush is inevitable to us, because the real East is far removed from the West in everything, including such a small thing as the treatment of an interior. The elements of the composition in a mosque interior are the fountain of cold water surrounded by cool and restful colours, and an exquisite diffused light. In the best mosques there is no attempt at strenuousness in anything. The mihrabs, though often marvels of detail, are set as a rich door in a plain wall would be, which means that they draw attention to themselves, but do not detract from the simplicity of the composition as a whole. Naturally, in Eastern countries, the smallness of the entire window area necessary for lighting a building adequately, vastly affects the conditions of design. It is

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this partly, perhaps, that makes the domical construction of these countries so easy, as there is no need to be eternally fussing about this or that window which interferes with this or that construction. The total effect of lighting in two interiors (one Western and the other Eastern) may be the same; the former with its many windows, and the latter with its few. The advantages, however, for purposes of decoration is distinctly with the East; the wall-spaces are broader and simpler, and the absence of an appearance of lighting forcing itself on one gives greater restfulness to the decorative effects. Thus in a measure the entire question of Eastern decoration must be considered with reference to itself alone. The large use of tiles in decoration is the prevailing characteristic of Persian art and what emanated from it. This makes possible the large spaces of plain colour which are necessary when only borders and spots of pure ornament are used. Hexagonal tiles of an exquisite blue-green, relieved by gem-like touches of pure colour, such as we see in the Green *Turbeh*, are, under the circumstances, perfectly satisfying. It is a question of surroundings and mental attitude to a large extent. Coming from the blinding sun and dusty glare of an Eastern summer into such a perfectly neutral half-light, with its cool marbles and fountains, and its atmosphere of satisfying colour, one feels a sense of the fitness of things. Use and wont and perception of long ago have made the materials which best suit the situation. The practical conclusion of the whole matter is to try and find out how the Moslem has solved the ordinary problems of his building, for naturally he has a certain discount to start with, having Persian tiles, which belong to the world's chiefest treasures of art, at his command. But if there are evidences of thought in their setting—as, I think, will easily be found in such buildings as the Green Mosque at Broussa—we can have scope, after the first burst of admiration, to contemplate wise solutions of problems which come very near to us after all. There is a strange freedom also in the treatment of much of the Turkish work which makes it easy to institute a comparison with modern work. For instance, Mr. Philip Webb's conception of stone detailing seems to me similar to the attitude of the Broussa builders in a like capacity. A strong feeling for material is evident, and a daring reserve in design which is nearly always justified in effect.

BRITISH ARCHÆOLOGICAL ASSOCIATION

A MEETING was held on the 20th ult., Mr. S. W. Kershaw, M.A., F.S.A., presiding, when an interesting paper was read upon "Some Old Halls in Wirral," by Mr. W. Ferguson Irvine, illustrated by many limelight views. The Hundred of Wirral possesses many special characteristics, due mainly to its peculiar surroundings and situation. Wirral, or "Wurrall," as the old natives call it, is the tongue of land lying between the estuaries of the Mersey and the Dee, and contains the only coast line which the county of Cheshire possesses; it is, in fact, a peninsula, being connected with the rest of the county by one narrow end. The Halls and Manor Houses of Wirral differ in many respects from the rich examples of domestic architecture for which Cheshire is so celebrated; nevertheless, they are not without quaint and picturesque features. One peculiarity about them is the half-timber construction, which is confined entirely to the frontages, the rest of the walls being of masonry. In Bidstone Hall we have a good specimen of the style of architecture of the early seventeenth century, the house being built in 1620 to 1622. In the deer park is still standing an old wall over six feet high, and about four feet thick, built of rough stones, which is referred to in almost every lease of the hall as far back as 1609, as "the great stone wall." Its antiquity may be much greater, as tradition records it was built when wages were a penny a day. The wall is popularly known amongst the villagers as the "Penny-a-day Dyke." Chiefly amongst the buildings described and illustrated were Leasowes Castle, Storeton Hall, connected with many memories of the historic house of Stanley, dating from about 1360, and architecturally a good example of the fourteenth century; Shotwick Hall; and the partly timbered houses of Irby, Hooton and Plessington. A somewhat unusual feature of these old halls is that not one of them can boast of having been the residence of a king or queen, yet the histories of many of them, as told by the lecturer, were romantic and interesting.

JOTTINGS.

MR. GEORGE CRISPIN, of the firm of Messrs. James Crispin, F.R.H.S. & Sons, horticultural engineers, of Bristol, was unanimously elected to the vacant seat on the council of the Incorporated Society of Heating and Ventilating Engineers at the annual meeting of the society held at the Holborn Restaurant, London, on the 26th ult.

THE Scarborough Burial Board have decided to spend a sum not exceeding £3,500 in providing chapel accommodation in the new cemetery.

THE West Hartlepool Town Council decided, on the 5th inst., to proceed with the erection of a municipal lodging-house, at a cost not exceeding £5,000.

THE Sunday opening of the Victoria and Albert Museum, South Kensington, the branch Museum at Bethnal Green, and the Geological Museum, Jermyn Street, will be, until further notice, from 2 to 5 p.m.

THE Arbroath Town Council have resolved to apply to the Secretary for Scotland for a Provisional Order conferring powers upon the Council to borrow a sum not exceeding £40,000 for the purpose of introducing the electric light into Arbroath.

THE Birmingham City Council, at a meeting held on the 5th inst., decided to spend £16,500 on the pavement of Hagley Road, between Chad Road and Hermitage Road, with hardwood. It has hitherto been a macadam road, and the change is to be made on account of the continuous heavy traffic on it.

A LARGE clock with three dials is to be placed in the tower of St. James's Church, Wolverhampton. It will strike the hours and have all the latest improvements. John Smith & Sons, Midland Clock Works, Derby, are doing the work. A few years ago the same firm put up the large clock in the parish church, Wolverhampton.

THE divers working off the Island of Cerigo have recovered several more marble statues, including one of a man seated. Most of the statues are damaged by their long immersion. A gold buckle, ornamented with a Cupid, has also been discovered. The divers report that a considerable quantity of antiquities still remains to be brought up.

IN connection with the new town of Vickerstown on Walney Island, Barrow, which is being built by Messrs. Vickers, Sons & Maxim, and where over 1,000 houses are being erected for the workmen employed at the shipyard, an application has been made to light the whole of the houses and streets by electricity. The Corporation have decided to carry out the work at a cost of £12,000, and will apply to the Local Government Board for power to borrow that sum.

AT a meeting of the Architectural Craftsmen's Society (Glasgow) on the 23rd ult., Mr. John G. Dunn read a paper on the "Practice of Chimney Stack and Boiler Building." To ensure the stability of a stack, he said, the founds must be built with best Portland cement, with footings projecting the thickness of the wall, or inverted arches used. The stack should have a square base, a batter of ¼ in. to the foot, with hoop iron horizontal ties. The brick courses should be at right angles to the batter, and no port holes cut after the stack had taken its bearing. Further remarks were made on the subject of efficiency of draught and architectural treatment, and then the lecturer passed on to the consideration of boiler setting, explaining carefully the various types of flues, boilers and fuel economisers, the entire paper being of a most practical nature.

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The British Architect.

LONDON: FRIDAY, MARCH 15, 1901.

THE NEW EDUCATIONAL SCHEME OF THE ARCHITECTURAL ASSOCIATION.

THE scheme for the establishment of day courses of instruction, as approved and adopted by the General Committee of the Architectural Association, was unanimously agreed to at the special meeting of the Association held on Friday evening last. The attendance of members was very small, especially considering the importance of the subject to be discussed. This was somewhat of a pity, for one would have liked to have had a less one-sided discussion, if only for the sake of strengthening the arguments in favour of the scheme. There was practically no opposition to it, the only dissenting note being sounded in a letter from Professor Beresford Pite, read to the meeting by the president, Mr. W. H. Seth-Smith. Mr. Pite, who was on the Education Committee appointed to deal with the question, emphatically declares against the proposal as being unwise in the true interests of the Association, and entirely dissociates himself from its recommendation. But so far as the members present were concerned the scheme was unanimously approved and duly adopted.

The chief speaker was Mr. Aston Webb, and he blessed the project altogether. The questions he set himself to answer in regard to the proposed classes were:—1. Are they required? 2. Is the Association the proper body to carry them on? As to the first point, Mr. Webb added little to what has already been stated in favour of the scheme. He emphasised the idea that the classes would be valuable in the preparation of youths as architectural pupils. There were a number of elementary subjects and details of practical work, he pointed out, with which pupils might well become familiarised before entering architects' offices, such as the drawing of orders, the studying of the elementary problems of construction, including stresses and strains, the nature of materials, etc. Such elementary knowledge as this, Mr. Webb suggested, was better learnt in a school than in an office.

No doubt this is so. The pupil who comes to his master with a certain modicum of well-digested elementary knowledge must be decidedly better qualified to take up the position of a learner in an architect's office than one who knows absolutely nothing of the rudiments of architecture. He will learn more in less time, and he will, besides, be infinitely more useful to his master. The chief danger we apprehend lies in the possible imagining that such preliminary education and training might stand in lieu of pupilage, which we think would be a more or less disastrous result. The old system of pupilage was certainly not such as to greatly commend it to modern ideas and methods. The time served was too long, and in the beginning savoured too much of office-boy drudgery, whilst all through there was little of real teaching on the part of the master, and not a great deal of learning by the pupil. And yet apprenticeship is to our thinking a most necessary and integral part of architectural education and training.

Mr. Webb said he had had a fear lest this proposed two years' elementary course might be taken as meaning the production of the finished article, and that students who had passed through it might then consider themselves qualified to act as head assistants, or even to begin practice on their own account. He had communicated this fear to Professor Sampson, the Professor of Architecture at Liverpool University College, who, in reply, stated that his experience was that there was no danger of this kind to be apprehended, and further expressing the opinion that the English system was to be preferred to that of France or Germany, since it permitted of students entering architects' offices as pupils afterwards. We do not think ourselves that this one or two years' course could ever be really imagined a sufficient education in itself even by the most conceited. The only question likely to arise would be whether a student who had passed a two years' course would not think he had got beyond the pupil stage as ordinarily understood, and there might be demur to paying a large premium with such a student. In fact, he would probably be inclined to rate himself as being at least worth the place of a junior assistant at a small salary. Therefore, we think, that so far as preliminary education is concerned, the one year's course should be counted sufficient, the second years' course being taken in conjunction with pupilage. In any case, we believe it would be an utterly false move to allow any system of professional education to supersede pupilage. There is so much of practical work and detail that can be learned nowhere so well or so thoroughly as in an architect's office. Just as the education of the technical school or institute can never stand in the place of a good workshop apprenticeship, so no mere scholastic or studio education can be reckoned of such value as to make architectural pupilage of little or no account.

Neither Mr. Leonard Stokes nor Mr. John Slater added anything to Mr. Webb's statement in favour of the scheme. Indeed, there seemed to be general unanimity in favour of the scheme, which, as Mr. Webb pointed out, is to be undertaken free of all risk to the Association. By all means let the experiment be tried. *Taken in conjunction with the work a student has to do as a pupil in an architect's office*, we believe the scheme should work well, and be of real educational value. We shall look forward with the greatest possible interest to the results, which should lead to yet further developments, and ultimately—who knows?—to the establishment of a completely organised and equipped College of Architecture in the fullest sense of the term. This is the legitimate outcome of the past and present work of the Association.

THE ARCHITECTS' BENEVOLENT SOCIETY.

THE annual general meeting of the Architects' Benevolent Society, which was held on Wednesday afternoon last, under the presidency of Mr. William Emerson, the President of the Royal Institute of British Architects, brings to mind once again the admirable work which the Society has so quietly and yet so steadily pursued for more than half a century past. It is the only purely philanthropic agency which the architectural profession possesses, and its object, as we have many times before stated, is to afford assistance to those in necessitous circumstances, who have been engaged as architects or architects' assistants, and to their widows and children. Yet when the measure of support, accorded to it by architects themselves, comes to be analysed we find it to be very unsatisfactory.

Mr. Emerson, in his opening remarks at Wednesday's meeting, pointed out that whilst there were 1,611 members of the Institute of British Architects only 245 of them were down as donors or subscribers to the Architects' Benevolent Society, which leaves 1,366 non-contributors. If these 1,366 members who have not given would contribute only half-a-crown each there would be a nice little addition to the present income. Last year, Mr. Emerson says, they made a special effort, sending out some 5,000 appeals, but the response was practically *nil*. And whilst the funds do not grow as they should, the applications for assistance keep on increasing. Of course, the desire of the Council is to be able to relieve every genuine case of distress, but without the necessary funds they cannot do so. Every care is taken to ensure that the assistance is properly bestowed. Not a single case is relieved, Mr. Emerson tells us, that is not looked into most carefully. Nor is there any wasteful expenditure incurred in the management and the distribution of the funds. So that subscribers and donors can rest assured that practically all their money is directly devoted to the object of the Society.

But clearly something more will have to be done in the near future if the work of the Society is to be adequately carried on. There was not much suggestion offered as to the best method of increasing the funds by the speakers at the meeting. Of course, if those who are really interested in the society's object try to get others really interested as well, something definite may be done. We have more faith in the personal appeal of one to another than in the

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official sending out of circular letters. Many a man will give when he is personally asked, whereas he can easily lay aside a circular letter and conveniently forget all about it. We are sure that in so good a cause a little judicious buttonholing would be well repaid. Then the force of example helps a good deal in the gaining of new subscribers. Take Mr. Macvicar Anderson's subscription of £50 at the meeting, and his offer to make it £100 if nine other gentlemen would also each subscribe £100 a piece. Here is a direct incentive, and Mr. Anderson was good enough to agree to hold to his offer if the £900 were raised by a larger number of donors than nine by the end of the year. Then Mr. Emerson agreed to give £50, and a donation of £100 from Mr. Charles Morrison was also announced. We may surely hope that these generous donations will stimulate others who have the means to be equally generous.

There could be no worthier philanthropic agency to claim the support of the architectural profession throughout the country, and if only every member of it would do a little there would be no need for urgent appeals, or for spasmodic efforts so arouse interest, professional and public, in its claims. Indeed, we should be glad to think it possible that everyone who reads these lines would immediately donate something, *however small*, to this most estimable charity. Whether it be £5, or five shillings, or perhaps only a shilling, it would soon add up, and so save expensive and more or less futile special appeals.

NOTES ON CURRENT EVENTS.

THE scheme for the new University of Birmingham has formed the subject of some correspondence between the Council of the Birmingham Architectural Association and the Council of the University in regard to the matter of designs. Hearing that Messrs. Aston Webb and Ingress Bell had been instructed to prepare a block plan of the new University buildings, the Council of the Birmingham Architectural Association enquired of the University authorities if this were preliminary to the institution of a competition for the designs proper. To this a reply was received to the effect that Messrs. Webb and Bell had been instructed to prepare sketch plans for the University, and that was as far as the matter had yet gone. The Council of the Birmingham Architectural Association then urged on behalf of Birmingham architects that there should be a competition, and that the sketch plans prepared by Messrs. Webb and Bell should form the basis of such competition. The reply was unfavourable to this proposal, it being stated that "in the opinion of the University council the principle of selecting designs by competition could not be advantageously adopted in the case of the University." The Council of the Association thereupon replied regretting the decision, and protesting "in the strongest manner" against the exclusion of Birmingham architects from the opportunity of taking part in competition for the work.

THERE were not many present at the annual general meeting of the Architects' Benevolent Society held at the Royal Institute of British Architects on Wednesday afternoon last. Mr. William Emerson presided. After the minutes of the last meeting had been read by the hon. secretary, Mr. Percival Currey, and confirmed, the fifty-first annual report was read by the assistant secretary, Mr. Dircks. This we give elsewhere in our present issue. The adoption of the report was formally moved by Mr. William Emerson, and seconded by Mr. Macvicar Anderson, and duly passed. Mr. Anderson promised a donation of £50, and offered to increase it to £100, provided another £900 were raised by the end of the year. Mr. Emerson also promised £50, and the hon. treasurer announced a donation of £100 from Mr. Charles Morrison. Mr. Anderson was cordially thanked for his offer, and votes of thanks were duly accorded to the retiring members of the Council, and also to the hon. treasurer, hon. secretary, and the hon. auditors, as also to the R.I.B.A. Council for the use of rooms and general assistance. Mr. William Emerson was re-elected President, and the following were elected members of the Council: T. M. Rickman, F.S.A., R. A. Briggs, Arthur Cates, E. A. Gruning, G. T. Hine, Zeph. King, G. Inskipp, J. T. Wimperis, Arthur Green, E. Monson, Sydney Smirke, H. L. Florence, Graham C. Awdry, J. T. Christopher, and J. H. Fellows Prynne. Mr. W. Hilton Nash was re-elected hon treasurer, and Mr. Percival Currey, hon. secretary. Mr. William Emerson and Mr. Arthur Cates were elected trustees in the place of the late Messrs. Barry and Currey.

AT the Architectural Association meeting on Friday evening last, certain amendments and additions were made to the by-laws, as a consequence of the adoption of the committee's scheme for the establishment of day courses of instruction. These amendments were as follows:—Add to By-law No. 14: "Each student who has attended the Day Courses of Instruction for one year shall be eligible for election as an Ordinary Member without payment of an entrance fee." Add to By-law No. 15 after the words "each Ordinary Member":—"(with the exception stated in By-law No. 14)." Add to By-law No. 27 at end "or one of the Hon. Secretaries." Add to By-law No. 30 before the word "Auditors," "Honorary." Add to By-law No. 36 the word "Honorary" before "Auditors" in every case. By-law No. 43 to read as follows:—"A Special General Meeting shall be called by the Honorary Secretaries when required by the Committee, or at any time, not less than two weeks nor more than eight weeks, after the receipt of a requisition, stating the purpose for which the meeting is required, and signed by at least 12 Ordinary Members. The presence of 25 Ordinary Members shall be necessary to constitute a quorum at any meeting called under this By-law, and in each case the agenda of business to be considered shall he duly posted up in the premises of the Association, advertised, sent by post or otherwise, as may be determined by the Committee, at least one clear week prior to the meeting, and no other business shall be taken at such meeting." Omit By-law No. 44. Add the following new By-law:—"No member of the Committee shall be appointed to a paid office or lectureship in connection with the Architectural Association."

A MEETING of the Royal Institute of British Architects will be held on Monday evening next, when Mr. C. Harrison Townsend is to read a paper on "The Art of Pictorial Mosaic," illustrated by lantern slides, and a collection of specimens and photographs of mosaic work.

IT should perhaps be noted that the meeting of the R.I.B.A., on April 1st, will be devoted to the discusion of an amended form of conditions of building contracts. The paper announced to be read on that date by Mr. Francis Bond will not be taken that evening, but will be postponed to April 22nd.

THE sub-committee of the Queen Victoria National Memorial met at St. James's Palace on Tuesday, when there were present:—Viscount Esher, Lord Windsor, Major-General Sir Arthur Ellis, Sir Edward Poynter, President of the Royal Academy, Mr. A. B. Freeman-Mitford, Mr. W. Emerson, President of the Royal Institute of British Architects, and Mr. Sidney Colvin. The sub-committee agreed to a report, which has been submitted to the King and to the general committee.

"THE architectural drawings in the current exhibition of the Royal Scottish Academy do not," according to the *Scotsman*, "include any particularly interesting or important buildings, unless we except from that category Mr. H. J. Blanc's designs of the new Royal Infirmary, Glasgow, which were lodged in a recent competition in the west. To students of public buildings of this nature they are worth more than a passing glance. The same member of the Academy shows in model form the Bangor village lunatic asylum (618), which the District Lunacy Board is shortly to erect at the expense of the rates for pauper lunatics. Another model shown is that of commercial buildings in Princes Street, now being erected from designs by Hamilton, Paterson & Rhind, for Macvittie, Guest & Co., Limited, and which promise to be an adornment to the section of the street in which they are situated. Mr. P. L. Henderson's designs of

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the new chapter-room in Edinburgh for the Supreme Grand Royal Arch Chapter, with their Egyptian decorations, are interesting to the outsider; and the design by Mr. George Watson for St. Serf's Church, Goldenacre, shows a vigorously treated piece of Gothic."

A PAPER on "Dilapidations" will be read by Mr. W. J. Jennings, F.S.I., at the meeting of the Society of Architects, on Thursday evening next, the 21st inst.

PAPERS on the "Planning of tenements for the labouring classes" were read at last Friday's meeting of the Glasgow Architectural Craftsmen's Society by Mr. James McKissack and Mr. James Lochhead, A.R.I.B.A. Mr. McKissack confined his remarks to tenements constructed on the "Common Close" system, with reference to the arrangement of two-roomed and single apartment houses on the most sanitary and economic principles. The lecturer advocated the desirability of providing a separate w.c. to each house, and showed suggested plans of such arrangements. Mr. Lochhead's paper dealt with that type of dwelling to which entrance is gained from a balcony at each flat, with common stair placed either outside or within. In planning on the "balcony" system the following points were to be considered:—The staircase should be placed outside preferably, and no bedrooms should overlook the balcony, the scullery or w.c. being placed adjacent to this. The site would require to be fairly level, in order that the level balcony might serve a sufficient stretch of building. Votes of thanks were heartily accorded to the lecturers.

THE Pyx Chapel, a quaint old chamber in the precincts of Westminster Abbey, is shortly to be opened to the inspection of the public. This old chamber, which was once used as a treasure house, first, by the Abbey, and after the dissolution of the monasteries, by the State itself, is henceforth to be in the custody of the Office of Works. A good many interesting facts respecting this chamber can be gleaned from Dean Stanley's historical memoirs of Westminster Abbey. The ancient glories of the place have long since departed. "But," says Dean Stanley, "it continues, like the enchanted cave of Toledo or Cavadonga, the original hiding-place of England's gold, the one undoubted relic of the Confessor's architecture, the one solid block of the fabric of the monarchy, overshadowed, but not absorbed, by the ecclesiastical influences around it, a testimony at once to the sacredness of the Abbey and to the independence of the Crown."

THE question of the legality or otherwise of the placing of a rood screen in the church of S. Anselm's was decided at a meeting of the Court of Arches on Monday last. Chancellor Tristram had ruled that the screen was illegal, and the donor, Mr. Shilbeck, and the vicar and churchwardens appealed. In delivering judgment the Dean of Arches, Sir Arthur Charles, reviewed a number of previous decisions, which were to the effect that if architectural devices of sacred subjects were erected for the purposes of decoration only they were not unlawful in the Church of England, but they became so if they were likely to be made the objects of superstitious reverence and regard. He was unable to adopt the decision of the court below on this point, and he was left to decide whether this screen would be likely to become an object of superstitious reverence or not. There was nothing in the information given him by the vicar or the donor to lead him to the belief that in the service or ornaments of this church there was anything different from those of other churches. The ritual had always been worthily obeyed. The appeal would therefore be allowed and the faculty issued.

THE final report of the Artists' War Fund must be regarded as very satisfactory reading. The committee, of whom Sir L. Alma-Tadema, R.A., was the chairman, Mr. Frank Dicksee, R.A., the vice-chairman, Mr. Val Prinsep, R.A., the hon. treasurer, and Mr. M. H. Spielman the hon. secretary, issued invitations to over 300 artists. The response was generous and enthusiastic. A total number of 328 artists (including her late beloved Majesty Queen Victoria, the Empress Frederick, and Princess Louise, Duchess of Argyll) contributed 346 works. Several works were also presented by several artists who had not been specially invited. About 60 artists and architects, unable to contribute works, together with a few unsolicited sympathisers, presented to the fund £1,085 in money. No deductions whatever have had to be made for working expenses, though these have necessarily been heavy, as they have all been defrayed by the workers in aid of the fund. The fund realised over £10,593, which has been handed over to the Lord Mayor, to be distributed to the following funds, in the proportions named:—Patriotic Fund, £2,004 18s. 6d.; Colonial Troops, £2,004 18s. 6d.; Officers' Fund, £2,151 9s. 11d.; Soldiers' and Sailors' Families Association, £2,261 14s. 11d.; Soldiers' and Sailors' Disabled Fund, £2,170 9s. 11d. The committee's report adds that the Glasgow Artists' War Fund collected £2,800, which sum has been handed over to the Scottish funds. It is added that the picture by Mr. J. J. Shannon, A.R.A., painted for the Maine Fund, realised £500.

THE London Corporation have decided to subscribe 5,000 guineas to the Queen Victoria Memorial Fund, payable in five yearly instalments of 1,000 guineas. Liverpool proposes to inaugurate a local memorial, and it is suggested that the amount aimed at should be £100,000.

IN the House of Lords, on the 10th inst., Lord Monkswell moved the second reading of the Cremation Bill, for the regulation of the burning of human remains, and to enable burial authorities to establish crematoria, the plans of which would have to be approved by the Local Government Board, while the Home Office would make regulations prescribing in what cases and under what conditions the burning of human remains might take place. Lord Belper consented to the second reading on behalf of the Home Secretary, subject to any amendments that might be thought desirable in Committee. The Bill was then read a second time.

A BRITISH Congress on Tuberculosis for the Prevention of Consumption is to be held in the Queen's Hall, London, from the 22nd to the 26th July next.

WRITES a correspondent:—"The latest unkind cut at a much abused individual may amuse you. An old plumber was found the other day resting outside a somewhat pretentious house. Asked if he had nothing better to do, and what right he had to fix himself up just outside this particular house, he replied, 'Well, you see, the house is my own, and I've been doing some work in it, and have taken it as part payment' "

ENGINEERING AND SANITARY NOTES.

BY CHAS. E. GRITTON, A.M.I.C.E.

HANDICAPPING TRADE.

IN Great Britain trades unionism devotes its energies to reducing the output per diem of each man to a minimum in order that employment may go further, and wages be higher. An instance of this has been given lately. The labour union committee classified making a small gun attachment as a day and a quarter's work. A machine was specially designed to make it, but even then the union men would produce the piece only in a day and a quarter. A German workman was next employed, who easily produced 13 pieces in a day!

UNDERGROUND RAILWAY FOR BERLIN.

According to the Berlin papers of the 9th inst., the Traffic Committee of the corporation has decided that the city shall undertake the construction of the underground railway according to its own plans. The committee has further approved an expenditure of 20,000 marks for the drawing up of special plans for the construction of the north to south line, which is to be completed first.

THE MERSEY DOCKS AND HARBOUR ENGINEER'S SALARY.

The salary of Mr. A. G. Lyster, M.Inst.C.E., engineer to the Mersey Docks and Harbour Board, has been increased from £3,500 to £4,500. This increase was approved by the Board at their meeting last week.

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THE IRON HORSE.

An illustration in *Science Siftings* shows an automobile horse to pull any vehicle, and so arranged that it is driven as if it were a quadruped. Reins are provided for steering and stopping it. A steady pull with both reins slows down the motor and applies the brake. "Bearing reins" are also supplied, a pull on which brings the steed up on its haunches, so to say. The lines cannot be termed exactly graceful, but the advantage seems to be that when one sells one's horses, this useful substitute can be harnessed to one's favourite pony carriage. It is sanitary, cannot slip on asphalte, and consumes no corn. It recalls the story of the snowed-up train. One passenger remarking that even the iron horse was stopped, was corrected by another for so calling it. Asked why he considered the name incorrect, he replied, with a far-away look in his eyes:—"Because its block (ed t) in"!

AMERICAN COMPETITION.

I think a good deal of nonsense is talked about the competition of our American cousins. We are of one blood, and although it's unwise to prophecy unless you know, I believe the time is coming when the Anglo-Saxon will boss the world. Few people in this country are aware how almost without exception the big manufacturing firms in the States are directed and managed by Britons. Mr. Broom, President of the Goheen Manufacturing Company, was born in Glasgow, N.B., of Scotch parents, and when over here last summer told me this fact.

A USEFUL DIARY AND NOTE BOOK FOR ENGINEERS.

I have received from Messrs. Dorman, Long & Co., Limited, of 19, Victoria Street, S.W., a most neat and handy pocket diary and note book, containing much useful information. I believe that anyone interested may obtain a copy by applying to this well-known firm.

SOME THINGS ARE NOT WHAT THEY SEEM!

In a recent engineering exam. candidates were asked to state what they would do in setting out a new railway through bad country, where a river, a huge rock, and a dense wood came very much in the way? The correct answer from a laconic student at first somewhat startled the examiners: "I should dam the river, blast the rock, and send the wood to blazes!"

LOCKED IN A PADDED ROOM!

Such was my thrilling experience one day this week, but because some people seem so fond of saying unkind things, I hasten to explain that the incarceration was purely voluntary on my part, prompted by the desire for a novel experience, and in pursuit of realism. I found it soft, warm, and—but for the absence of sunlight and the all-pervading smell of india-rubber—comfortable. My step was certainly more elastic! A patient not long ago shut in for certain troublesome eccentricities, and possessing very large and beautiful teeth, managed to fix them in the rubber wall, and then going to work literally with tooth and nail, stripped the walls, doing damage to the tune of quite £100 in a very short time!

THE FIRST ELECTRICAL TRAMWAY IN LONDON.

A trial trip on the first electrical tramway in London was run the other day on the lines of the London United Tramways Company. These, it will be remembered, now extend from Hammersmith Broadway to Kew Bridge and Brentford, and from the terminus of the Central London Railway at Shepherd's Bush to Acton, with a connecting link from Shepherd's Bush along Goldhawk Road to Young's Corner, in the Chiswick Road. The experimental trip was made over the Kew Bridge and Hammersmith section. Although the electrical equipment of the lines and the generating plant has been ready for use for some months, it has not been possible to begin the experimental running of cars, which is a necessary preliminary to the introduction of electricity for working the ordinary passenger traffic, until the present time, owing to the inability of the Board of Trade to settle the regulations which by Act of Parliament it is its function to lay down for the due protection of the magnetic instruments at Kew Observatory from disturbance by stray electrical currents from the tramway. Further experiments have been made and on the *data* thus ascertained the Kew authorities will be able to determine the amount of magnetic disturbance, if any, caused by the company's operations, and on the Kew report the Board of Trade will formulate the regulations to which the company must conform before the line can be opened for public traffic.

ARCHITECTS' BENEVOLENT SOCIETY'S FIFTY-FIRST ANNUAL REPORT.*

THE Council of the Architects' Benevolent Society, in making their report to the contributors for the year of office 1900-1901, have the satisfaction to state that notwithstanding the many calls upon private benevolence during the period under review, the income has not only been maintained, but increased. Although the society has suffered severely during the last few years by the death of many of its oldest and most generous supporters, its income, through the careful management of successive Councils, has not been permitted to diminish; but, on the other hand, the financial progress has scarcely kept pace with the demands on the charity of the society. Last year it was thought that the society's growing needs might be met by the generous response which an explanation of its aims and position would receive at a public dinner; but, in view of the state of public affairs at the time, the project was deferred to a more favourable opportunity. Still, as a special effort was necessary to enable the Council to carry on their philanthropic work without rejecting the claims of deserving applicants for relief, the president, with the honorary secretary, undertook to issue a letter of appeal to members of the profession in the United Kingdom and Ireland, and such a letter was sent out in June last. In view of the large number—some five thousand architects—to whom the appeal was made, the result was scarcely as favourable as might have been anticipated, but it was successful in so far that it enabled the Council to afford a larger measure of practical help where it was urgently needed than would otherwise have been possible. The names of those who responded to the appeal, with the amount of the contributions, were published in the *Journal* of the Royal Institute of British Architects of the 10th of November, the amount received, or promised, in new annual subscriptions being £98 9s. 6d., and in donations £151 17s., while the total cost of issuing the appeal was £38 8s. 8d.

In connection with the appeal the Council wish to express their cordial appreciation of the efforts of Mr. E. Monson, who successfully exercised his influence in securing additional subscriptions and donations.

Suggestions have from time to time been received by the Council to the effect that the society would be more liberally supported if its existence and objects were more widely known, but the Council fear that any further promulgation of the society's aims than is at present attempted would place it under a burden of expense without a prospect of adequate return. The Council would remind subscribers that the Red Book has been issued annually for many years, not only to members of the society, but to members of the Royal Institute of British Architects; that a considerable sum is spent yearly in advertising, and that advantage is taken of the hospitality of the columns of the Journal of the Royal Institute to give publicity to the society's proceedings. In addition to the currency thus given to the society's affairs the Council last year incurred the expense of the letter of appeal addressed to every practising architect in the three kingdoms. With these facts in view it is felt that the lack of support accorded to the society by the general body of the architectural profession must be attributed to other causes than absence of knowledge of its existence.

The Council, at the suggestion of a subscriber, have had also under consideration the desirability of issuing voting papers to members of the society, and have arrived at the decision that such a system, instead of advancing the objects of the society, would be a contravention of by-law 68, which states "that the names of persons

* Presented at the Annual General Meeting held on the 13th inst.

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relieved by the society shall not be published." The council feel that as the society exists to assist members of a profession, or those dependent on them, privacy forms an essential part of its scheme of benevolence, and that the publicity which a system of voting entails would prevent many of those whom it is most desired to reach from seeking the help of the society. The council would further remind members that they have the privilege of nominating applicants for relief according to the amount of their subscription.

With reference to the society's income account, the council desire to draw attention to the fact, notwithstanding that the amount received in subscriptions for the year was £522 os. 6d., as compared with £469 3s. received in 1899, there was a balance at the debit of the account on the 31st December of £42 11s. 11d. It is the first time in the history of the society that such a deficiency has occurred, and it is due to the large number of urgent applications for assistance which were considered and relieved. This bears eloquent testimony to the great need of the society for further support. It is hoped that the deficit may be promptly covered by the acquisition of a sufficient number of new annual subscribers.

The number of applications for relief has been greater than in any previous year, being 55, as compared with 40 in 1899. The sum thus distributed was £677 13s., while £112 10s. was paid to pensioners, making the total sum expended in relief £790 3s.

Two of the Society's pensioners having died during the year, their places were filled by eligible and deserving applicants.

The Council have to record, with great regret, the decease of two distinguished architects who acted as trustees for the Society—Mr. Charles Barry and Mr. Henry Currey. Both gentlemen had taken a lifelong interest in the Society, were frequently elected members of the Council, and were always helpful in promoting its usefulness. Other and more recent losses were Mr. H. C. Boyes, a member of the Council at the time of his decease, and Mr. D. P. Fordham.

Mr. William Emerson, President of the Royal Institute of British Architects, and Mr. Arthur Cates have been nominated by the Council for election as trustees, to fill the vacancies caused by the death of Mr. Barry and Mr. Currey.

The following gentlemen, being the five senior members, retire by rotation from the Council: Mr. R. St. A. Roumieu, Mr. W. Woodward, Mr. E. B. I'Anson, Mr. E. H. Martineau, and Mr. E. T. Hall. To fill these vacancies and that caused by the death of Mr. Boyes, the Council beg to nominate: Mr. Arthur Green, Mr. E. Monson, Mr. Sydney Smirke, Mr. H. L. Florence, Mr. Graham C. Awdry, Mr. J. T. Christopher, and Mr. G. H. Fellowes Prynne.

The balance sheet and income account for the year ended the 31st of December, 1900, were audited by Mr. J. T. Christopher and Mr. Henry Hall.

It remains for the Council to thank the Royal Institute of British Architects for office and other accommodation, and its officials for help and courtesy in any matter connected with the Society.

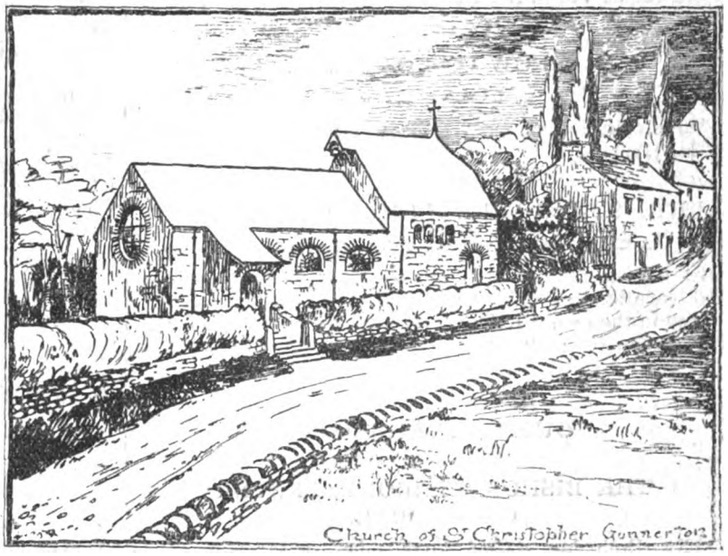
OUR ILLUSTRATIONS.

ST. CHRISTOPHER'S CHURCH, GUNNERTON.

JOHN HAWES, ARCHITECT.

WE illustrate a more than usually interesting village church to-day. This church, consecrated last November, has been erected as an outlying hamlet chapel for the parish of St. Giles, Chollerton, Northumberland. It stands by the roadside, near the lower end of the village, the old stone cottages with their blue slate or grey stone roofs rising picturesquely behind it. From its north side a steep wooded bank slopes down sheer to a winding burne, whose waters rush and tumble over its rocky bed, their murmuring audible within the quiet stillness of the church to sooth the meditations of those who frequent the sanctuary for silent worship.

The building consists of chancel with sacristy behind the altar, and nave with north transept and south porch. Fourteen steps lead up through the porch to the nave floor, and five more from the nave to the altar. The sanctuary is separated from the nave by a low screen below the Rood beam, the screen having gates in the centre and an ambone on either side; within, a dignified and unencumbered open space is provided for those ministering around the altar; the altar screen, with two arched openings in it to right



and left of the altar, separating the sacristy. The choir is at the west end, both organ and singers being on a raised platform or "singing gallery," underneath which is the stoking chamber for the "grundy" heating apparatus. The screen in front of the singers has four large pierced panels, carved in oak, representing the "Bendedicite, omnia opera," the song of Ananias, Azarias and Misael in the "burning firey furnace." We illustrate these on our plate. The front of the high altar is a single slab of Campan Melangé from the Pyrenees; the transept is furnished with an old oak altar brought from another Tyneside church.

The roof of the chancel is higher than that of the nave, thus emphasizing the dignity and importance of the altar, and giving a suggestion of mystery and extent to the interior of the church; this is further pronounced by having a white ceiling to the nave; while the chancel ceiling is stained dark, dying into the walls without the intervention of cornice. The walls are coloured a warm red; the dado and woodwork, in the chancel being a dark Indian red, in the nave blue green; the roof, beams and cornice in the nave being also painted the same green. Thick walls for warmth, and large undivided windows to admit plenty of light and sunshine, are provided; the north side being left almost windowless, after the example of many old Northumbrian churches. The front is about 800 years old, it is a relic of a former chapel in Gunnerton which had been allowed to fall to ruin and completely disappear during the general neglect of the last three centuries; but the large stone bowl of the font had been preserved by its decoration and adaption to domestic uses in a farmyard. There are also some ancient Saxon crosses which have been built into the walls of the porch.

The church is entirely built of local stone, rock-faced rubble, and the roofs are covered with small blue grey slates. The bell is hung over the chancel arch under a projecting portion of the chancel roof. All the wood carving inside has been done as a gift; likewise some oil paintings which, with other pictures, relieve the bareness of the north wall. The nave benches and singing loft accommodate 90 worshippers with a liberal allowance of space for each, but with extra chairs nearly 150 can be seated on occasions. The complete cost of the church, including heating and all fittings, and furniture, has been about £8,000; it should be added, however, that the material for

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stone walling was all given by the quarry owners. All the work, including practically all the fittings, is of local craftsmanship, being carried out from beginning to end under the personal supervision, on the spot, of Mr. John Hawes, the architect, as clerk of works. The builder was Mr. William Smith, and the master-mason, Mr. W. Welton, both of Gunnerton. The two small east windows are filled with stained glass, no more, however, being contemplated, as the other windows are all designed to be kept glazed with clear glass. The "inventory" of church furniture is to be enriched by a chalice and paten from the hand of Mr. H. Wilson. The figure of Our Lord for the Rood is a Swiss one carved in the Tyrol.

A ROW OF COTTAGES.

R. H. HASLAM, ARCHITECT.

We illustrate some more typical cottage designs by Mr. R. H. Haslam.

R.I.B.A. SOANE MEDALLION COMPETITION.

A CLUB HOUSE DESIGN BY A. E. CORBETT.

In our issue of the 15th ult. we gave the exterior view and elevations of this excellent design, which was submitted in the recent R.I.B.A. Soane Medallion Competition, under the motto "Thor."

OUR LETTER BOX.

THE BISHOP'S THRONE, EXETER CATHEDRAL.

SIR,—Both Mr. Alfred Darbyshire, F.R.I.B.A., and your printer, are a trifle mixed in this week's issue. In the illustrations a comprehensive perspective view of the interior of Exeter Cathedral's nave is described as "HEREFORD"; whilst Mr. Darbyshire, by a mysterious sort of slip of the pen assigns our glorious 14th-century Bishop's Throne, as work executed during the rule of Bishop Bothe, and erected between the years A.D. 1466 and 1478. In this statement he has evidently been unconsciously misled by some deceased authors who are no authority upon the subject. The Fabric Rolls are very clear as to where and under whom this grand Episcopal Throne was made. It is of decorated character, the finest example of work of that period in existence—precisely as the Sedilia, made by the direction of the same Bishop—is, without a doubt, the most delicate example of stonework of that period existing anywhere in Christendom.

The Exeter Throne is the loftiest and most elaborate episcopal seat and canopy in existence. It is 57 ft. high (not 52 as quoted by Mr. Darbyshire). The next in size and beauty, perhaps, is in the 14th-century Cathedral at Barcelona in Spain, the spot where that celebrated virgin martyr of the early days of the 4th century, S. Eulalia, is said to be buried.

In the Fabric Rolls still preserved in the Chapter House we find the Exeter Throne was made under Bishop Stapeldon (A.D. 1308-1326), who also transformed the choir transepts, built the rood screen, and began the north cloisters. In 1312 there occurs a charge for "timber for the Bishop's Seat, £6 12s. 8½d." This oak was procured in the wooded lands of Chudleigh and Newton Abbot, distant 10 and 16 miles from Exeter respectively. Carted to Exeter it was then stacked away for some three or four years to season. In 1316 there is a further charge of £4, paid to Robert de Galmeton, one of the cleverest workers in oak this world has ever seen, "for making the Bishop's seat *ad tascum*," *i.e.*, by piece-work. Then follows, "and to Nicholas, painter, for statues, 11s." There is also an extra charge for "Magn-Clavis de Cheveron Episcopi," probably meaning the oak pins used in fixing. The entire cost of this large and exquisitely-carved canopy was surprisingly small even for those days. It was about £12 12s. When, in 1870-77, the interior of Exeter Cathedral was restored by the late Sir George Gilbert Scott, R.A., the Bishop's Throne was taken down and renovated by my old friend the late Mr. Edwin L. Luscombe, the then Cathedral chief craftsman, at a cost of 1,000 guineas. The Puritans destroyed all the figures that were placed under the minor canopies upon this throne, and the brackets upon which they formerly stood are empty to this day.

In the Fabric Rolls for 1317-18, there occurs a charge of 32s. "for carving six statues for the Bishop's Seat." This might naturally at first sight be supposed to refer to the figures that originally stood upon the throne itself. But it so happens there are but five niches thereupon for statues, whereas in the Beer stone sedilia in the sanctuary close by there are exactly six. Moreover, it is worthy of record that nowhere in the Rolls is the word "carving" (*talliare*—French *tailler*) ever applied to *wood*—but always to stone. So there can be little doubt but that two structures in the Cathedral—one of wood and one of stone—were called in the old records "The Bishop's Seat." These we now define, respectively, the Throne and the Sedilia.

The above particulars and minor corrections will probably be useful to those who have followed the contents of Mr. A. Darbyshire's most interesting paper upon "Some English Cathedrals."

Yours obediently,
HARRY HEMS.

Fair Park, Exeter.
March 8th, 1901.

A MODERN VIEW OF LONDON CHURCH ARCHITECTURE.—IX.

BY T. F. BUMPUS.

(*Continued from page* 163.)

LESS ritually, but more architecturally correct than St. Barnabas, is the fourth church of this group—another splendid instance of wealth ungrudgingly bestowed to make God's House beautiful, another costly temple planted in a squalid neighbourhood—that of St. Stephen, Rochester Row, Westminster, built between 1847 and 1850, from the designs of Benjamin Ferreys, by the munificence of the Baroness Burdett Coutts.

The architect's model was apparently one of those fine moderately-sized churches met with in Lincolnshire, an especially beautiful feature in it being the delicately-filletted shafts of the nave arcade, with their foliaged caps. The tower, which rises at the east end of the north aisle, might, with advantage have been increased in height, supporting as it does a very *elancee* spire, whose contour, viewed from certain points, is not altogether pleasing. This disparity between the two heights might have been remedied by broaches or by pinnacles at its base, additional to those crowning the tower.

Although it is not the type of church that would nowadays be recommended for town use—the deep transepts being ill-adapted for the Prayer Book service—the church of the Holy Trinity, Bessborough Gardens, built and endowed at the cost of Archdeacon Bentinck, deservedly won more admiration from the general public at the time of its completion, in 1852, than any of its class in London.*

* In addition to the churches noticed with more or less particularity as built in London during this "imitative" phase of the Revival, as it may be termed, the following deserve mention:—Christ Church, Broadway, Westminster, in which its architect (Poynter) introduced some features borrowed from the neighbouring Abbey; Christ Church, Endell Street, St. Giles'; St. Mark, Old Street, by Benjamin Ferry; and St. Barnabas, Homerton, by Ashpitel. In the first of the three last-named churches Mr. Ferrey was not oblivious of that feature indispensable in a town church, the clerestory, but the whole would have been greatly improved and its truncated appearance obviated by the substitution of an apsidal for the rectangular eastern termination. The second, which has a graceful broach spire, is much more suited to a country churchyard; the third, a respectable flowing, Decorated structure, is often mistaken by the uninitiated for a veritable mediæval church. St. Stephen's, Shepherd's Bush, built and endowed at the cost of Bishop Blomfield by Salvin, also deserves mention. During the same period a number were built in Islington, but of these churches little or nothing can be said in praise, the majority combining every architectural and ritual shortcoming, as may be guessed from their antecedents. Of a better sort architecturally, but, from a ritualistic point of view, equally defective, are several erected in St. Pancras, through the exertions of the Rev. Thomas Dale, Canon of St. Paul's and vicar of that important parish from 1846 to 1860. Of late years the ritual deficiencies of these structures have been

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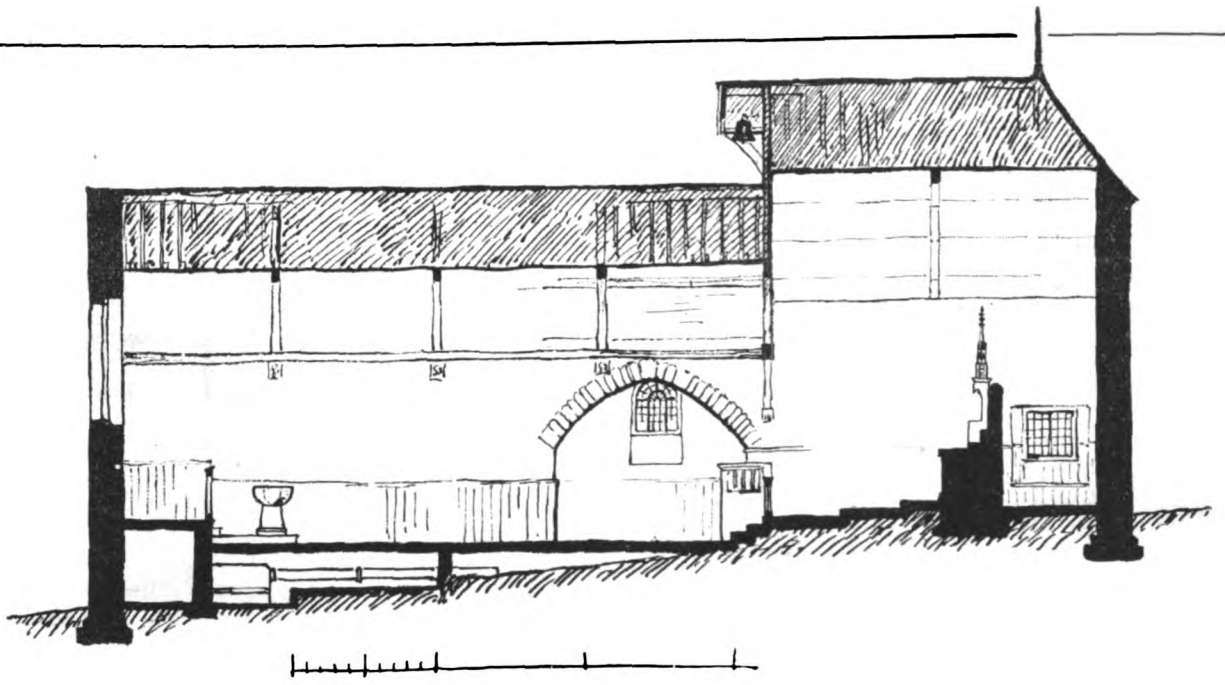

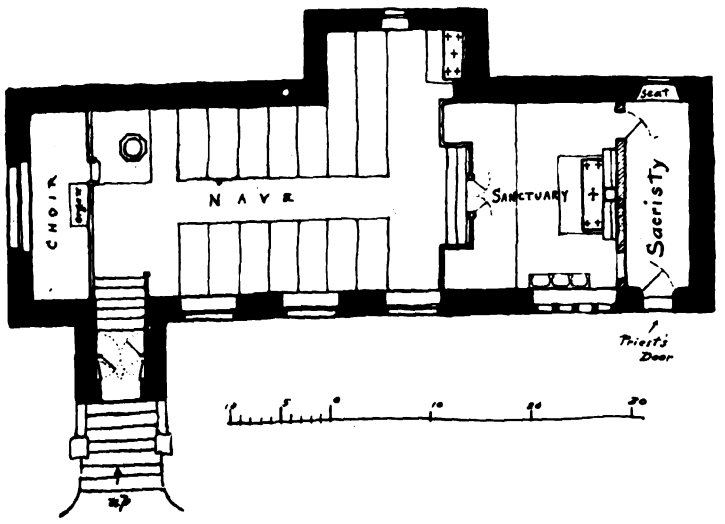

GUNNERTON CHURCH NORTHUMBERLAND JOHN HAWES

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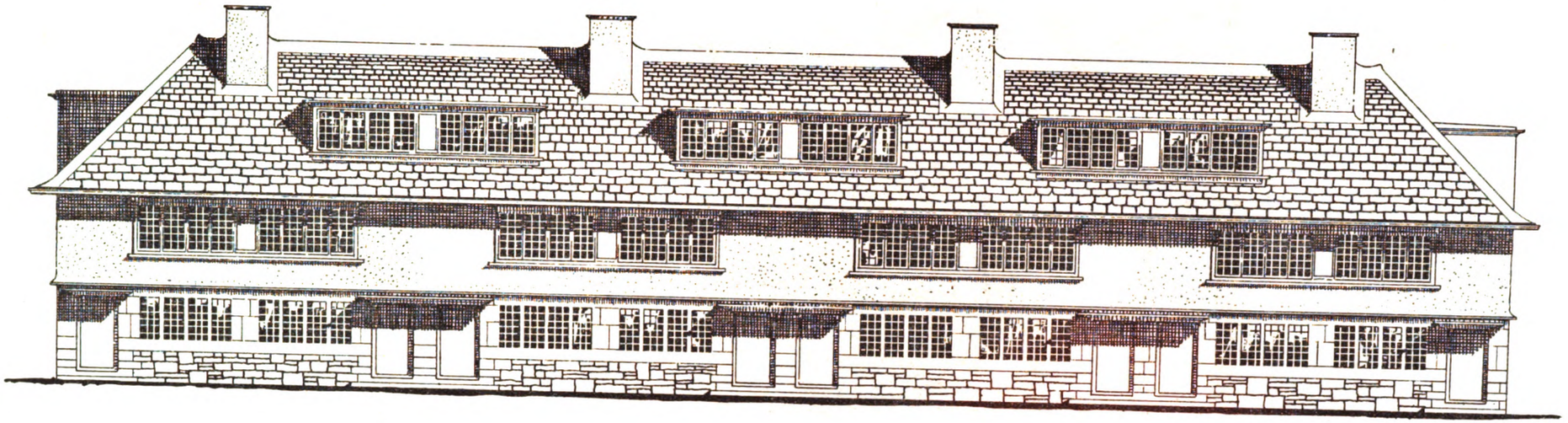
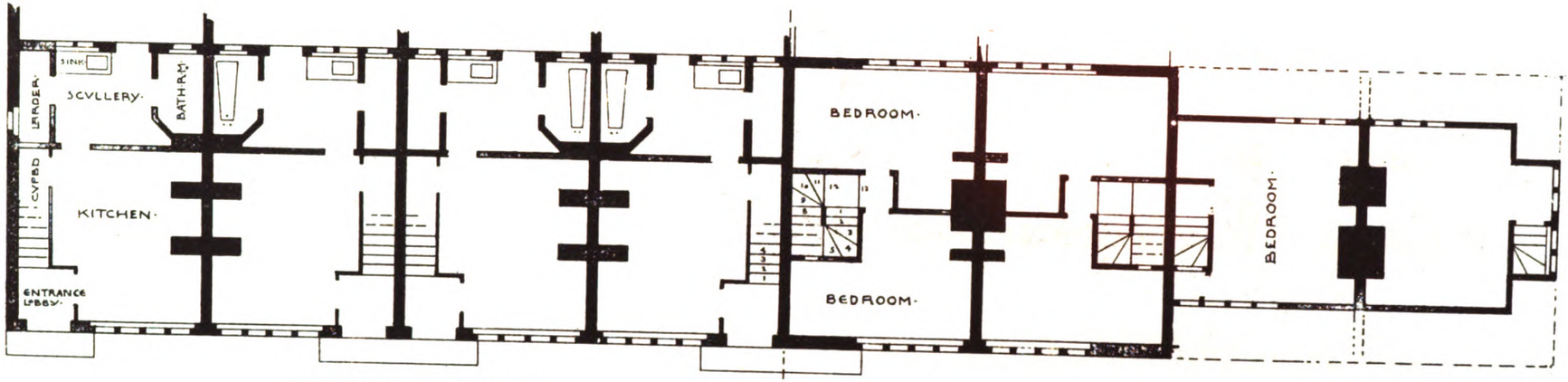
ALTERNATIVE PLANS AND ELEVATION OF A ROW OF COTTAGES





GROUND FLOOR PLAN. FIRST FLOOR PLAN. SECOND FLOOR PLAN.

HEYWOOD HASLAM. ARCHITECT.

THE BRITISH ARCHITECT. MARCH 15TH 1901 COPYRIGHT.

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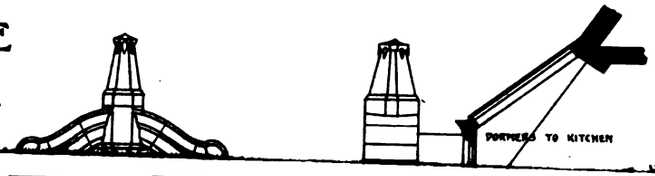
A TOWN CLUB HOUSE

DETAIL OF PART OF PRINCIPAL FRONT

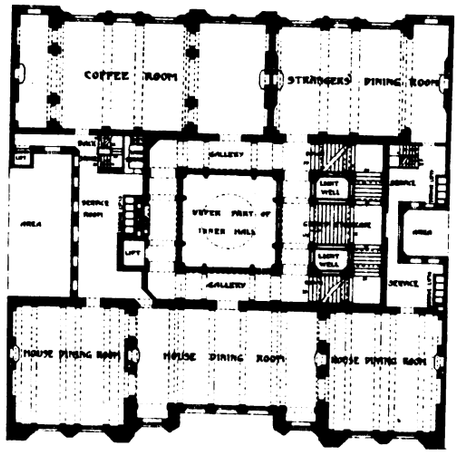


SCALE ½ INCH = 1 FOOT

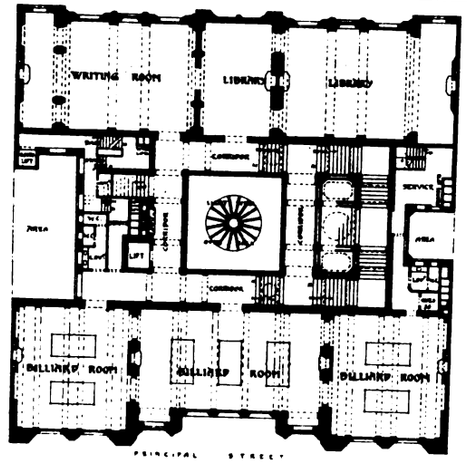
0 5 10 15 20

PORTMEIRS TO KITCHEN

LIGHT, GLAZED WITH LEADED



FIRST FLOOR PLAN



SECOND FLOOR PLAN

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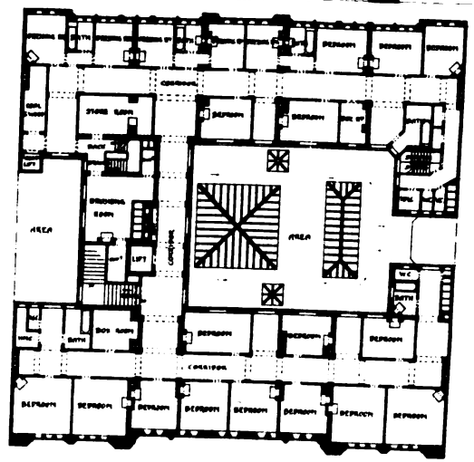
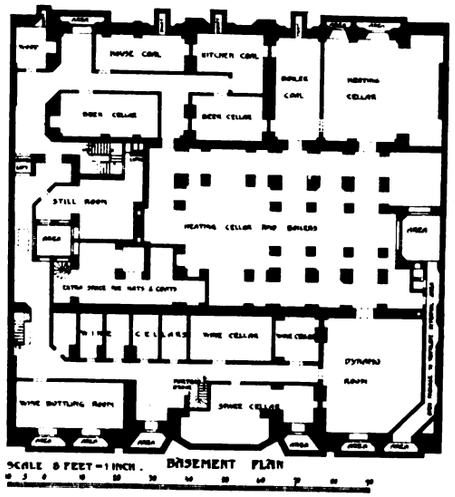
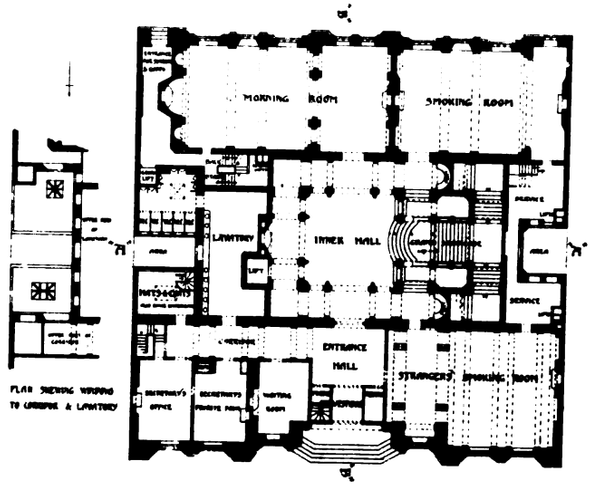


THIRD FLOOR PLAN



SCALE 8 FEET = 1 INCH. BASEMENT PLAN



GROUND FLOOR PLAN

SCALE 8 FEET = 1 INCH

R.I.B.A. SOANE MEDALLION COMPETITION

DESIGN BY A. E. CORBETT

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Perhaps in no contemporary building was the fourteenth century cruciform church more ably reproduced than in this instance; and singularly enough, the first architect of his day in England and France (Sir G. G. Scott and M. Didron), selected it from a number of others as a model. Additional interest is attached to Holy Trinity Church, Westminster, when we remember that it was the first London work of its architect, the late John Loughborough Pearson, R.A. Enjoying, as it does, an excellent situation in an open space at the foot of Vauxhall Bridge, its component parts, meeting in a nobly-proportioned tower and spire, which invests the whole with a dignity unusual at the time in ecclesiastical design, can be viewed to great advantage. The least successful part of the church is the nave, which conveys the idea that more has been attempted than is consistent with the dimensions. To judge of the change which had taken place in the views of the designer of Holy Trinity Church ten years later, it is necessary but to cross Vauxhall Bridge, and there, in Upper Kennington Lane, will be found the stately brick-vaulted church of St. Peter, which holds so important a place in that "original" or "inventive" phase of the Gothic Revival, to which for a short space attention must be directed.*

The study of continental Gothic had sensibly affected our national architecture, when, about 1853, Sir G. G. Scott drew the plans for the church of St. Andrew, Ashley Place, Westminster, and a little later those for a large church of similar character, St. Mary, Stoke Newington. Although these two buildings, as well as the beautiful chapel of Exeter College, Oxford, which was rising about the same time, are not distinctly English in their character, there is nothing in either of them that suggests a thorough conversion on the part of their architect to the principles of foreign Gothic. Yet with their gabled aisles, their nave arcades supported on tall cylindrical columns with boldly foliaged capitals, and their aisleless apses lighted by graceful windows of two lights—(these two churches modelled by their architect upon some of the great ones built for the preaching orders in Belgium and Germany), are not only of a type quite unknown in this country, but one which, once made use of by Sir Gilbert Scott, may be said to have completely revolutionised our ecclesiastical architecture.

It was at first hoped that St. Andrew's, Westminster, might be erected on a scale more worthy of its position, but though munificently supported in various quarters, the general contributions, much to the regret of those who saw the exuberance and fancy of the original drawings, were so scanty as to necessitate the adoption of a comparatively humble design. But, while sacrificing richness and magnificence, Scott was enabled to attain boldness and novelty by the adoption of the German "Hall" plan—its tall three-light windows placed under separate gables, the slender fleche at the junction of the nave and chancel, and the graceful apse investing the pile with an air of dignity which the tall block of houses in Ashley Place do their utmost to dwarf. Inside there is no rival to distract attention from its positive proportions; and so the church pleases by its breadth and repose. In a report published some years ago on St. Andrew's, Mr. John Oldrid Scott says "I am much impressed by its noble design. I know no church built by my father more impressive in its internal effect."

Many London churches of the Revival desiderate a profusion of bright and graceful colours, but few in a greater degree than St. Andrew's, Westminster, whose circular pillars, with their luxuriant capitals, present a peculiarly advantageous opportunity for the display of pronounced hues; while the large Early Decorated windows, lighting the aisles, afford scope for the highest flights in modern vitreous decoration.* Beautiful storied stained glass fills four of the five windows in the apse—copied, as regards their tracery, from those in the chapels surrounding the choir of Cologne Cathedral—by Clayton and Bell; † while tasteful ameliorations, in the shape of a reredos and choir stalls, from the pencil of Sir G. G. Scott's son—Mr. John Oldrid Scott, have done much towards mitigating the chilling aspect this fine interior wore until their introduction some eighteen years ago.

In St. Mary, Stoke Newington, Scott carried out the same idea on a larger scale, with the addition of transepts and a western steeple. This last was left incomplete at the time of the church's consecration in 1858, but the works were resumed thirty years later, the belfry stage of great grace, and spire less successful, being completed from the designs of Mr. John Oldrid Scott during the summer of 1890. The interior of this church is among the most noble and imposing of the modern churches in the kingdom, but it seems a pity that the chancel and apse should have been left without a groin, an indispensable feature in a church, terminating pentagonally, and one which we likewise desiderate, in St. Andrew's. The carving of the pier caps in the nave with natural foliage and flowers merits careful attention, as does that of the north porch. The arch opening into the church from beneath the steeple—albeit sadly encumbered by heavy entrance doors—is very noble; the font is equipped with angels from the chisel of the younger Westmacott; the reredos and pulpit, by Farmer and Brindley, from Scott's designs, exhibit considerable originality, besides being extremely graceful and appropriate; and there is a good amount of stained glass, the best being that of Clayton and Bell in the apse and clerestory of the transepts, and that by Gibbs in two windows of the nobly groined tower above the western entrance.

In the apse, whose windows are long ones of two trefoil-headed lights, with a sexfoiled circle—the shafts having delicately foliaged caps, and the dripstones terminating in angelic figures—Messrs. Clayton & Bell have adopted the same system of iconography observable in their windows executed almost contemporaneously for Sir Gilbert Scott and occupying the same position in his chapel of Exeter College, Oxford, viz., two tiers of groups beneath conventional Middle Pointed canopies and representing paralleled scenes from the Old and New Testament.‡

remedied, and two of them have been put in possession of handsome chancels from the designs of the late Sir Arthur Blomfield, and fitted with every requisite for the dignified performance both of the choir and altar service. St. Mark's Albert Road, and St. Paul's, Camden Square, are the two churches thus equipped; while of Holy Trinity, Haverstock Hill, and St. Matthew's, Oakley Square—from the designs of Raphael Brandon, and John Johnson respectively, the choral and sanctuary arrangements have been much improved.

* This change which came over the spirit of our ecclesiastical architecture, this desire on the part of our architects to emancipate themselves from leading strings before the fifties had run out are traceable to a variety of causes, among which may be enumerated the increasing facilities for Continental travel, the teaching of Mr. Ruskin and the competitions, open to architects of Europe, for the erection of Notre Dame de la Treille at Lille, the Cathedral at Berne, and the Crimean Memorial Church at Constantinople. Certain architects, notably Butterfield, White, and Woodyer, while adhering to our insular forms and varieties of detail imported a greater interest into these buildings by stateliness and abnormalism of outline, and by the use of coloured materials hitherto but timidly manipulated. Others, among whom may be named, Bodley, Brooks, Burges, Bentley, Pearson, Street, and in a more temperate degree, Scott, unable to resist the fascination of continental study, revolted completely from national precedent giving us churches which both in plan, detail, and construction were foreign to our shores. And this, in the hands of practitioners who were sure of their tools, and were able to carry out their ideas on a broad scale, was all very well, but when importations from the Ile de France and Northern Italy were clumsily introduced into every Peel district of the Metropolis and provincial town by inferior imitators, it is not to be wondered at that a revulsion against this penchant for foreign forms to the detriment of our own pure pointed, should in a very short time have taken place,

*Mr. Kempe has lately made a beginning in this direction in a window on the south side, while other hands have put glass of a quiet unobtrusive character in the noble west window. This consists of shields bearing the emblems of the Apostles, of the Blessed Virgin, of St. Elizabeth and St. Catherine, St. Edward and St. Margaret, on square unflowered quarries. The effect is excellent, and gives sufficient relief to the eye, while obscuring no light.

†The central window represents the Adoration of the Lamb as recorded in the Book of Revelation, while the two on the north and one on the south have groups from the Life of Christ.

‡ At Exeter College the Resurrection has for its type the Extraction of Joseph from the Pit, and at St. Paul's, Dundee, where Hardman carried out a series of windows for Sir G. G. Scott, in the apse exhibiting the same iconography, the Resurrection is paralleled by the Casting of Jonah from the Whale, and the Procession to Calvary by Isaac carrying wood for His Sacrifice to Mount Moriah. St. Paul's, Dundee, finished in 1856, has in certain points an affinity to St. Andrew's, Westminster, and St. Mary's, Stoke Newington. St. Mary's recalls the Dundee Church as its prototype, for each possesses the western steeple opening into the nave by a lofty arch, the unclerestoried nave, the gabled aisles, the crux deficient in the western arch, and the apsidal chancel, but with this difference—at St. Mary's we find the nave arcade continued at the same level across the entrance to either transept with the superimposed space occupied by light wooden tracery after an Italian example, the cylindrical column with its boldy foliaged cap and the arch with the flat intrados—southern features absent at Dundee, where the treatment is more purely Northern

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Thus, in the central window of the apse at St. Mary's, The Crucifixion and The Agony in Gethsemane are paralleled by the Lifting up of the Brazen Serpent and the Reception by Moses of the Tables of the Law, while in the one to the immediate right we have the Ascension of our Lord typified by that of Elijah, and the Walk to Emmaus by Jacob's Dream.

The central window was inserted about 1860 and is consequently among the earlier works of the artists, but the groups are well drawn, the colouration brilliant, and the whole studied, it is believed, from some old French example admirably adapted to the style of the framework—a Majesty in the circle being extremely soft and beautiful in its tinctures. In the remaining four windows which were inserted fifteen years subsequent to the central one, and at different times, Messrs. Clayton & Bell were placed somewhat at a disadvantage, since their style having in the interim undergone changes, they were obliged—uniformity in this instance being imperative—to assimilate them to the one already in position. The general effect of these windows is, however, very good, the best of the set, because the most recent, being the southern one of the sanctuary wherein the Descent of the Holy Ghost is typified by the Placing of the Burning Coal on the Tongue of the Prophet Isaiah. Clayton & Bell's small brilliantly tinctured figures of Evangelists upon a cold grisaille ground in the lancets of the transepts are so admirable that it is deeply to be regretted the same hands were not employed to fill the grand north transept and nave aisle windows, most of which have been thrown away upon work of the most wretchedly vulgar and commonplace character.

Of late years the arrangements of the sanctuary at St. Mary's have undergone amelioration, but the chancel lacks parcloses, and a tall screen of some light material at its entrance is among the desiderata requisite for so nobly dimensioned an edifice. With the old church—almost entirely rebuilt 70 years ago by Sir Charles Barry—for its opposite neighbour, New St. Mary's, Stoke Newington, enjoys a magnificent situation at the west end of Church Street, and close to Clissold Park. The finest view of it is from the north-east, where the various parts group into one grand whole, though its actual proportions seem somewhat diminished since the completion of the tower and spire.

A striking contrast to St. Mary's, ecclesiologically, is St. Matthias', for while exhibiting the same phase of Pointed Art, it has been manipulated in a totally different spirit. This striking and abnormal Stoke Newington church, finished five years before St. Mary's, is one of four erected in London under the inventive phase of the Revival from the designs of Butterfield, All Saints', Margaret Street (1850—1859), St. Alban's, Holborn (1861—1863), and St. Augustine's, Queen's Gate (1871—1876), being the other three.*

THE ÆSTHETIC TREATMENT OF BRIDGE STRUCTURES.

THIS interesting subject was dealt with at a meeting of the Institution of Civil Engineers, at the ordinary meeting on Tuesday last, by Mr. Joseph Husband, Assoc. M.Inst.C.E.

The opening portion of Mr. Husband's paper had reference to some fundamental laws of æsthetics which it was desirable to observe in general design, at the same time pointing out the connection between æsthetic and economic treatment. The effects on æsthetic appearance of the necessity for rapid construction, choice of material, difficulties of site and magnitude of structure were noticed, together with the importance of making allowance for these in criticising completed works. Adverse criticism was shown to be frequently due to comparison with wrong or unsuitable standards, especially in the case of very large structures. The strong connection between true economy and æsthetics, as evidenced by natural examples, was next mentioned, and the relation of these to artificial structures was considered. General requirements, such as simplicity in design, proper employment of materials and choice of the most pleasing outline where option existed between two or more economical schemes, were noted, as well as the inadvisability of attempting to lay down rules for regulating æsthetic design. Some cases existed in which external ornament might be appropriately employed with economy, whilst many others were totally unsuited for such treatment and suffered detraction if it were followed; and again, abuse of ornament led to æsthetic failure.

Bridge structures in general were, for convenience of consideration, divided into three distinct classes—those built entirely of masonry, those constructed entirely of metal, and those in which masonry and metal both figured. These broadly corresponded to works of small span, large span, and intermediate span respectively. The strong relation between masonry types and architecture was noticed, and the various features of the masonry bridge were considered in detail. The effect on the general appearance of different modes of treatment as applied to the arch-ring, spandrils, piers, abutments, and parapet, was commented on, and several instances were cited in which the due observance of the primary laws of æsthetics improved the design without militating against economy. Criticism of masonry structures almost invariably reverted to comparison with architectural standards, often an unfair procedure. Several existing structures were referred to in illustration of the points considered.

The second class of structures, consisting of bridges constructed entirely of steel or iron, was sub-divided into representative types, each one being considered separately. Emphasis was laid on the necessity for employing a totally different standard of comparison in estimating the æsthetic value of such works, adverse criticism being frequently due to the neglect of this requirement. True æsthetic effect in these structures was due in a much greater degree to a correct observance of simple and economical design, and the adoption of the most pleasing outline consistent with other conditions, the use of applied ornament being almost æsthetically impossible and economically harmful. Several examples of cantilever, suspension, and arched bridges were referred to and illustrated, as well as lofty viaducts carried on metal piers. The various features of each as affecting æsthetic appearance were noticed, and cases were instanced in which special difficulties in the way of construction and site had prohibited the employment of a pleasing outline, whilst economy in design had still been preserved. The most recent examples of large bridge structures were cited wherever possible in demonstration of the points at issue. In dealing with the large-span arch, distinct varieties of outline were illustrated, and the relative merits of each were discussed from an æsthetic point of view. A short notice was devoted to the use of more or less ornate masonry towers in connection with the steel arched bridge.

In the third class of structures were considered large-span bridges having masonry piers of such magnitude as to exert a considerable effect on their æsthetic appearance, the most successful examples being those from which architectural ornament had been strictly excluded, and in which a simple but massive treatment had been followed in harmony with the dimensions of the superstructure. In this section were also treated the various types of girder bridges of smaller span, many of which, although possessing little claim to æsthetic value, might yet be rendered more pleasing in appearance by careful attention to several salient features in their design.

The paper concluded with a brief notice of the employment of cast-iron ornament in bridge structures, examples being quoted in which its adoption might be desirable, and others in which, by militating against economy, the fundamental principles of æsthetics were also violated. Instances of its eminently successful application were

and Teutonic. St. Paul's is therefore the superior, purer, and more virginal work of the two, despite the grander scale on which the London church was conceived.

* Other churches built by Butterfield in different parts of London are:—St. John's, Hammersmith, and the chapels of Fulham Palace and Battersea Training College (all 1858—1861); St. Barnabas, Rotherhithe (1872); St. Mary Brookfield, Highgate (nave only, 1875); All-Hallows, Tottenham (transepts, chancel and nave clerestory, 1875—76); St. Michael, Woolwich (nave only, 1878); St. Clement, City Road (1880); St. Mary Magdalene, Enfield (1883), and St. Mary, Edmonton (1884); but the four to be described with greater particularity may be accepted as typical specimens of their architect's work.

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mentioned, and illustrations were supplied showing the comparative æsthetic effects of the use of cast-iron and steel in structural wrok.

The paper was accompanied by 47 illustrations and an appendix giving the leading particulars of all the mportant bridges illustrated.

APPRENTICESHIP IN THE BUILDING TRADES.

UNDER the title of "Some Aspects of the Labour Question as Applied to the Building Industry," Mr. John Good, hon. secretary of the Master Builders' Association of Dublin, gave an address to the members of the Architectural Association of Ireland on the 6th inst.

The building industry in Dublin, said Mr. Good, was a large one, comprising upwards of 7,000 hands. It was generally recruited from apprentices, indentured and unindentured, for improvers. The indentured apprentice system—a very ancient one—has been found to yield the best results, although it was capable of immense improvement, both in instruction, inspection, and examination. The conditions of apprenticeship varied considerably in the different trades. In the carpenters and joiners the apprentices were principally bound to the employers, and there was no limit as to numbers. However, the percentage of apprentices and improvers here was too small, being 22·8 per cent. instead of 33·33. In the second largest skilled branch of the building industry—the stone and bricklayers—*the apprentices must be the sons of a member of the trade*; but under some circumstances the rule was relaxed on the payment of a £30 fee. One would scarcely have thought that this hereditary or "caste" system could exist in these enlightened days. There were only 3·2 per cent. of apprentices in this trade, and one per cent. of improvers—less than one apprentice and improver to every 24 men, instead of one to three or 33·33 per cent.—the necessary number to keep the trade in a healthy and efficient state. In the plastering trade, where the "caste" system in regard to apprentices also prevailed, and no improvers were allowed, there were 25 per cent. of apprentices, or 8·33 per cent. below the necessary number. In the stonecutting trade, in which, except under extreme circumstances, the "caste" system also pervailed, the percentage of apprentices was 19. In other words, in the entire trade there was 17·75 on an average of apprentices, as against the necessary 33·33 per cent.—an appalling deficiency of 600 being the result. Thus sufficient men were not being trained to fill the gaps in the ranks, tradesmen were coming from other places to fill the positions, and thousands of able, but unskilled, hands were forced to seek a living elsewhere.

Mr. Good, having pointed out the necessity of a sound theoretical training and practical instruction in these trades in which there were no standards at present, said that this work of technical instruction should be in the hands of a public or Government department, and he trusted the present system would soon be amended through the exertions of the new Department of Technical Instruction, for which they owed a deep debt of gratitude to Mr. Horace Plunkett.

THE CONSTRUCTION OF LUNATIC ASYLUMS.*

By GEORGE T. HINE.

(*Continued from page* 142.)

THE London Asylums Committee have found it necessary to add temporary buildings to some of their asylums. These erections, chiefly of wood and iron, provide accommodation for 1,700 patients, at a total cost of about £173,000, averaging £100 a bed—a costly expedient, considering the limited life of these structures.

Scotch asylums are administered by a Board of Commissioners, whose duties, though similar in many respects to those of the English Commissioners, are exercised under different laws and with different results in the planning of these buildings. The system of housing, in the acute hospital, the curable and incurable cases together is encouraged by the Scotch Commissioners, who consider it undesirable to separate entirely the two classes. This view is upheld by Dr. Conolly, who considers the absolute separation of the curable from the incurable to be neither practicable nor desirable—the incurable patients being generally fitter companions for the curable than the curable patients are. English medical experts, however, hold that a hospital, totally distinct and apart from the asylum, for the reception and treatment of new cases which are not diagnosed as hopelessly incurable, must prove an important factor in the cure of lunacy. It is well known that many forms of insanity are curable at an early stage, but by neglect or unfavourable conditions often result in permanent and incurable disease.

In 1889 the London County Council appointed a committee to inquire into and report upon the advantages of the establishment, as a compliment to the existing asylum system, of a hospital with a visiting medical staff for the study and curative treatment of insanity. The committee held meetings, and invited leading medical experts to give evidence. Their report showed the evidence to be greatly in favour of the scheme, and they summed up strongly recommending the establishment of such a hospital. The County Council nevertheless ignored the recommendation, and have continued building asylums on the old lines. Other county authorities, however, have taken up the matter, and are providing hospitals for the reception and treatment of curable cases. The provision of an accute hospital the author considered to be one of the most important evolutions in modern asylum planning.

Touching asylums on the Continent, various plans were shown of German asylums, and interesting details given of the villa system as seen in the asylum at Alt Scherbitz, which may be said to have originated this type of planning, now adopted more or less in modern American asylums, and more recently, but to a less extent, in England. The villas are constructed very much like boarding-schools, with day and class-rooms on the ground floor and associated dormitories above. The doors and windows are open, and the patients come and go as they please, wander about or work in the grounds, enjoying comparative freedom, but always under the watchful eye of carefully-trained attendants. No wall encloses the estate, only a light and easily climbable fence. The gardens surrounding the houses in the central establishment are enclosed with palings, grown over with plants and creepers. The colony is bounded on the south by the river Elster, which flows at the foot of a steep hill in the grounds, and there is nothing to prevent a patient rushing down the hill and plunging into the river. Great value is attached to residence in the colony, and patients are given to understand that their stay there depends on their good behaviour, and are thus encouraged to exercise self-control.

Having given an account of asylums as they are, the author went on to deal with future possibilities of asylum designing, and then to give a detailed description of an asylum as it should be, instancing a building to accommodate, say, 800 patients, with provision for future extension to 1,200. As an illustration, the plans were referred to of the new East Sussex Asylum now erecting at Hellingly, which has been designed on the most modern lines, the whole scheme having been most carefully thought out by a committee of the County Council, with Dr. Hayes Newington at its head, whose wide experience, acquired in many years' association with asylum work, gave his committee an immense advantage in determining the basis on which they should work.

To understand the first principles of asylum construction it is necessary to know something of the eccentricities of insanity and the habits and treatment of the insane. The author recommended the student in asylum planning to make friends at all opportunities with the medical experts, and to study the subject in the light of those whose duty it is to look after the insane. The architect can materially assist the doctor in both the cure and protection of the patient by the careful consideration he gives to the details of planning and construction of the asylum,

* Abstract of a paper read at a meeting of the Royal Institute of British Architects on the 18th ult.

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and in doing this he will find that he must design buildings which give security without appearance of restraint. The ever-present sense of detention is, in a way, as inimical to cure as were the cells and fetters of the eighteenth century.

In the ideal asylum the most important building must be the acute hospital. Here it is that every patient, unless hopelessly incurable, is admitted, and during his stay in this hospital his future life is probably determined, whether he shall recover and go back into the world, or whether he shall pass on to the main asylum for the remainder of his days, to eke out an unhappy existence at a cost of more than £30 a year to his country. On every ground we cannot afford to neglect anything—consideration, care, or money necessary to produce a building—which affords the doctors the best opportunities for treating and curing their patients. Any money thus spent will prove the truest economy in the end.

The various parts of this ideal asylum having been discussed in detail, together with the engineering works, internal fittings, laundry, systems of heating and ventilation, etc., the author concluded his paper by a reference to the cost. He was of opinion that a well-built asylum, designed on liberal principles, and fitted with all modern appliances, cannot be erected for much less than £300 a bed. Twenty-five years ago Nottingham Borough Asylum cost £170 a bed. But that the increased cost is not out of proportion to that of other building works is shown by the report of the Metropolitan Commissioners, where the cost of 15 asylums erected before the year 1845 is stated to have averaged £200 a bed, some even then approaching as much as £300 a bed.

TRADE NOTES.

WE understand that a company is being formed under the title of the Sabiwa Proprietory Mines, Limited. It is, promoted by the Rice Hamilton Exploration Syndicate, Limited, and Rhodesia, Limited, and the capital is £400,000, in £1 shares, but there will be no public issue of the shares. The mining claims it is proposed to acquire are situated in the well-known Gwanda district, some 72 miles in a south-easterly direction from Bulawayo, and 10 miles north of the Gwanda township. According to the report of Mr. H. A. Pringle, the consulting engineer of Rhodesia, Limited, the prospective results of the working of these claims are excellent. The price to be paid by the company for the property has been fixed by the vendors at £300,000, payable as to £30,000 in cash or fully paid shares, or partly in cash and fully paid shares at the option of the directors, and as to £270,000 by the allotment to the vendors, of 270,000 fully paid shares of £1 each, credited as fully paid up. Of this sum £30,000 in cash or shares, and 245,000 shares will be payable to the Rice Hamilton Exploration Syndicate, Limited, and 25,000 shares to Rhodesia, Limited, being the amounts agreed upon by the respective vendor companies.

THE Hoylake branch of Parr's Bank, the Chadderton branch of Manchester and County Bank, and the Oldham Street branch of Lancashire and Yorkshire Bank are to be fitted with Spencer's patent heating apparatus with electro copper bronze fittings, of which the patentee and sole maker is Mr. W. F. Spencer, Cross Bank Works, Oldham.

THE new headquarters for the 2nd V.B. Highland Light Infantry, at Yorkhill, Glasgow, the memorial stone of which was laid on Saturday last, is being ventilated by means of Mackay's patent direct-acting ventilators, supplied by Messrs. Cousland & Mackay, Ventilating Engineers, 150, Hope Street, Glasgow, the sole makers.

MESSRS. WILLIAM POTTS & SONS, clock manufacturers, Guildford Street, Leeds, have just completed a fine new hour striking clock for Dingley Parish Church, Market Harborough, showing the time upon one large external dial. The clock is fitted with gravity escapement and compensation pendulum and all latest improvements, and has been supplied to the order of the Right. Hon. Viscount Downe, Dingley Park, for whom Messrs. Potts recently erected a clock at Wykeham Church, Yorkshire.

JOTTINGS.

THE grave of Hippocrates has just been unearthed in Thessaly.

THE Crown lease of No. 4, Whitehall Gardens, the house in which Sir Robert Peel lived from 1828 until his death in 1850, is for sale.

UNTIL further notice the Victoria and Albert Museum will be open to the public till six o'clock on the Students' days (Wednesdays, Thursdays, and Fridays), and on Sundays.

THE Scarborough Town Council have adopted plans and estimates for the erection and furnishing of an infectious diseases hospital, at a cost of over £17,000. The hospital will contain 38 beds.

MR. WELCH, the superintendent of the Niagara Reservation, states that the electricity generated by the Falls will be doubled in a short time, ensuring a current of 22,000 voltage. The leakage, which at present wastes 12½ per cent. of the power, will, he said, be reduced to 6¼ per cent, by the use of aluminium.

GETTING home somehow! A short time ago at the Volunteer range at Wormwood Scrubbs a recruit was taking a lesson in firing, but not with very promising results. After repeatedly failing to hit the target at 300 yards, the instructor tried him at 200, with the same result. He then decided to try him at 100 yards, but the results were even worse than before. Losing all patience, the instructor exclaimed in disgust: "Fix your bayonet, and go and stab the blooming thing; it is your only chance."

THE Bournemouth Town Council, through the generosity of Mr. J. E. Cooper Dean, ground landlord, have decided to construct a grand marine drive and promenade along the greater part of West Cliff. Mr. Cooper Dean has surrendered the slopes of the Chines and cliff front to the Corporation, about a mile in extent, and also leased several acres of land on the cliffs as pleasure and recreation ground, one of the finest gifts ever made to the town. The cost of the proposed works is estimated at £10,000, and the Corporation have decided to at once borrow money to commence the drive, etc.

AT the instance of the Street Committee of the London Corporation a report materially affecting city tradesmen was adopted at last week's meeting of the Corporation in reference to projecting boards and tablets. It was decided that all trade advertisement boards and tablets should not exceed 2 ft. 6 in. by 1 ft. 6 in., with a projection of not more that 3 ft. from the building and not less than 10 ft. from the ground, and that letting boards should be allowed the same projections. It was further referred back to the committee to obtain the removal or alterations of all boards erected in the city contrary to those regulations.

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The British Architect.

LONDON: FRIDAY, MARCH 22, 1901.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.—BUILDING AND SURVEYING.—Examinations for Certificates of Competency to act as District Surveyor under the London Building Act, 1894, and as Building Surveyor under Local Authorities, will be held at the Institute on the 18TH and 19TH APRIL.

Applications will be received until the 4TH APRIL by the undersigned, from whom forms of application may be obtained.

W. J. LOCKE,
Secretary.

No. 9, Conduit Street, Hanover Square, London, W.

THE MUNICIPAL SURVEYOR-ARCHITECT.

THE question as to the desirability or otherwise of the employment of the municipal or borough engineer or surveyor in the designing and carrying out of buildings of a more or less important municipal character, formed one of the subjects for discussion at the General Congress of Architects held in London last June. The meeting was only a small one, less than a score of architects being present, and eventually it was agreed by fourteen votes to five "That in the interests of architecture it is inexpedient that important buildings of a municipal character be designed and erected by the official engineer or surveyor to the municipality." This is, of course, a very meek and mild resolution to which in its general principle and tone no one could reasonably take exception. But it is also somewhat vague and indefinite in its application, which is a pity. It leaves us to judge for ourselves what might be included in the term "important buildings of a municipal character," and it also leaves out of consideration the surveyor or superintendent of buildings, sometimes dignified by the title of city architect, and sometimes by that of city superintendent of works.

That a municipal engineer expressly appointed to look after the drainage and water supply, street improvements, the administration of the building by-laws, and a multiplicity of similar duties should be expected to act also in the capacity of an architect for important municipal buildings is obviously to expect too much—too much at any rate so far as architecture is concerned. So that we can all pretty readily agree as to the inexpediency of the employment of a municipal engineer as architect for important public buildings. We ourselves would even go further, and say that in buildings which might not be considered worthy of being classed as important there is no reason why they should not be invested with some distinctly architectural quality. Even a fire-station, a covered market, or an entrance lodge to a public park are of architectural importance. In fact, every building is of architectural importance, seeing that our cities and towns by no means wholly consist of town halls and other buildings of an important public character. And who would say that the official stamp of the engineer was not largely marked upon many buildings which cannot perhaps be classed as "important" in the proper sense of the word? Yet "in the best interests of architectural art," which was the expressed motive of the Architects' Congress in passing the resolution they did, there is no reason why this should be so. Surely, without any suggestion of introducing the trades-union element into this question it might safely be regarded as in every way detrimental to the art of architecture that even municipal buildings of minor importance should be designed and carried out by municipal or borough engineers.

But there is also another municipal official to be reckoned with in considering this question, and that is the surveyor-architect, whose duties are more or less confined to the supervision of buildings erected under the building by-laws, the care of the municipal buildings, and the supervision of a good deal of work only very remotely connected with either building or architecture. But he is called an architect, whether he really is such or not. In several cases of late men have been appointed who have really had an architectural education and training. But, in spite of this, we believe that it is the practical business man, as distinct from the architect as designer and artist, who seeks these municipal officerships. No one who really loved his work as an architect would care to sacrifice his independence as an artist to the routine officialism of a servant of municipal or county councils. Therefore we do not think that even with architectural education and training the men who usually occupy the position of municipal surveyor or architect are those best qualified to undertake architectural work. Besides which the very nature of their general duties unfits them in a large measure for such work. Even the best men would feel the effect of the constant working in a groove, and the irksome restraint of the routine official duties to be performed. And then it might also be reasonably assumed that the duties they were specially appointed to carry out would of themselves be sufficiently absorbing to take up the whole of their time. But apparently their employers in not a few instances, think otherwise, and saddle them with extra work and responsibilities which are, as a matter of fact, outside the regular duties appertaining to their appointment. And so we hear of the architect-surveyor being called upon to design and carry out buildings which, in the ordinary course of their duties, they should not have to do.

An instructive instance of this kind of thing was furnished in the proceedings of the Edinburgh Town Council last week, when the Council decided to present Mr. Morham, the city superintendent of works, with an honorarium of £1,000, in consideration of the large amount of extra work that had been placed upon him in connection with the new fever hospital, the city chambers, the central fire station, and other buildings. It was stated by Bailie Telfer, in support of the granting of this honorarium, that during the last five years the capital expenditure on new work had amounted to the astonishing total of £476,843, besides preparatory plans for works under consideration to the value of £129,780. To that fell to be added the work of city superintendent, covering the superintendence and maintenance of properties valued at the gross amount of from £800,000 to a million sterling, and the preparation of sketch plans for the information of committees and sub-committees. The salaries paid to the city architect and his assistants during that period amounted to £13,052, that being the total cost of the department, covering the enormous amount of new work and the maintenance of existing works. If the same work had been done by a private architect, the commission on new work, at the minimum of 5 per cent., would have amounted to £23,992; plans for work under consideration, at 2½ per cent., would have cost £3,242; and superintendence would have cost £5,000; representing a total of £32,334 for work which had cost only £13,062 under Mr. Morham's department—a saving of nearly £20,000.

It will be seen at once that the chief point emphasised in the above statement is the saving of £20,000 by passing the work through a municipal department rather than putting it out to competition, or placing it in the hands of selected individual architects. This may, of course, be very satisfactory to the council, and more or less consoling to the ratepayers, but it leaves quite untouched the question of architecture. And if we apply the terms of the resolution passed by the Architects' Congress to the case, it by no means seems to cover it, or even to really definitely touch any phase of it. For what are we to understand by municipal buildings of an important character? Would the alteration and extension of the Edinburgh City Chambers be classed as such? Is a large fever hospital for the municipality an important public building? Or should a central fire brigade station be included in the category? Where shall we draw the line between what is important and what is not? And is architectural quality in comparatively unimportant buildings a factor of little or no consequence? These and other questions arise, which do not seem to find an answer in the discussion or conclusions arrived at by the Architects' Congress.

The real difficulty in the way of coming to any satisfactory conclusion upon the matter lies in the consideration as to whether the principle of not allowing municipal buildings to be designed and carried out by city surveyors, architects, or whatever name such officials may be known by, is purely in the interests of architectural art, or merely a plea for professional trades unionism. It is not quite easy, perhaps, to rid the arguments in favour of municipal surveyor-architects not undertaking the design-

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ing of buildings for municipal purposes from a suspicion of trades unionism, and yet we know the interests of architectural art are best served by the adoption of a free trade policy. There should be no false motives of economy or of favouritism behind, but the question should always be that of securing the best architecture. In the case of Edinburgh, and of other places also, this point of view has been apparently made entirely subservient to the question of saving the fees of outside architects. This, we maintain, is wrong in principle and unsatisfactory in result. The very fact that in the space of five years the city architect of Edinburgh has acted as architect for over half a million poundsworth of work, besides carrying on his multitudinous routine official duties, including the superintendence of properties valued at something like a million pounds, is surely argument enough as to the inexpediency of the municipal surveyor-architect being called upon to carry out architectural work of an important character. We should say that such an accumulation and admixture of work would be the most damning thing that could happen to any architect possessing any real love and enthusiasm for architecture as an art. Under such conditions, how would it be possible to expect architectural art to flourish and produce good results?

A MODERN VIEW OF LONDON CHURCH ARCHITECTURE.—X.

By T. F. BUMPUS.

(*Continued from page* 194.)

AS important contributions to the ecclesiology of the metropolis, these four churches of Butterfield merit analysing at a little length, so with this object we will proceed to their external and internal characteristics, which, to marshal from the consistency of their distinguished author, have a striking affinity. Each, without vitiating our own noble English Gothic style, was a magnificent endeavour to throw aside the trammels of conventionality in features which were rapidly becoming stereotyped, while, at the same time, a clear course was steered by their architect between that *bizarrerie* and rampant extravagance, too frequently mistaken by less accomplished practitioners for originality. Each was built chiefly of brick—the homeliest material, it is true—but the best for London, and one whose use in skilful hands is compatible with the highest flights of architecture.

A few words anent the history of these four remarkable buildings may not be out of place here. Each had a very humble beginning, and in the stately temples to which their congregations migrated, an elaborate ritual, grand and commensurately dignified even at the outset, has in the course of years been developed.

All Saints', Margaret Street, arose between 1850 and 1859—a period of the greatest enthusiasm and activity in the world of ecclesiastical art—on the site of Margaret Chapel, which has been described as a painfully ugly square room with a flat, whitewashed ceiling, two large galleries, the whole area filled with pews, no centre passage, but only two side ones, and a flat, plain east wall. In 1846, when the Cambridge Camden Society, quitting the town of its birth, started anew in London under the title of the Ecclesiological Society, and was indulging in day dreams of "model churches" dedicated to St. Alban, the proto martyr of Britain, the minister of Margaret Chapel was Rev. Upton Richards, who had succeeded to the incumbency on the resignation and subsequent secession to the Romish Church of Rev. Frederick Oakeley* The first ten years of the Oxford movement had inspired Mr. Oakeley with a love to render the services of the dingy old conventicle as reverent and devotional as circumstances would allow to a congregation composed of some of the highest and most talented in Church and State. And a power and a centre of enthusiastic work Margaret Chapel became under his auspices. The ritual ameliorations augmented by Mr. Oakeley were not only further improved under Mr. Upton Richards, but the scheme which had been originated for replacing the old edifice by a church, which should be as architecturally and ritually correct as the times permitted was fostered, until a sum of about £3,000 had been got together for that purpose. The Ecclesiological Society, having conceived the idea of erecting a "model church" in some part of the metropolis, Mr. Beresford Hope—one of the earliest and most zealous of Gothic revivalists—suggested the blending of the Society's scheme and that of the Margaret Chapel folks in one. This having been agreed to with the concurrence of Mr. Richards and Dean Chandler (rector of the mother church, All Souls', Langham Place), and Bishop Blomfield's consent having been asked and obtained, the work of building All Saints' from the plans of Mr. Butterfield, and under the superintendence of the Ecclesiological Society, was, after some little difficulty about the site,* commenced in 1850, splendid individual generosity causing it, as the ensuing nine years rolled on, to assume an appearance of sumptuousness which the Camdenians, in their wildest dreams, could never have deemed possible.

Some sixty years ago the design was formed in the minds of the founders and promoters of St. Matthias' (of whom Robert Brett, a surgeon, of Stoke Newington Green, and for many years one of the churchwardens, was the foremost) of erecting a church in this south-eastern portion of the parish of Stoke Newington, in which the system of the Prayer Book might be carried out in all its integrity; the prayers and praises of the Church offered daily with all due and lawful accompaniments of ritual and music; and the offering of the Holy Eucharist as the chief and highest act of Christian worship—at first weekly, and then, as now, daily—faithfully maintained. It was not, however, until All Saints' Day, 1849 (exactly fifty-one years ago as these lines are being penned) that the devout wishes of the promoters of St. Matthias' received their partial gratification in the opening for Divine Service of the school-rooms (also designed by Mr. Butterfield) adjoining the present church. Here for nearly four years, while the funds for St. Matthias' were being gathered and the church was building, a very beautiful choral service was carried on, to which persons from quite distant parts of London resorted. Humble as the building was in which the congregation assembled, it was the enthusiasm, the spirit of the thing, that carried all before it; indeed, on Sundays there was not room in these schools for an additional chair.

Much zeal and earnestness, too, was manifested in promoting the erection of the church; contributions flowed in not only in money (Queen Adelaide and Bishop Lonsdale, of Lichfield, being among the donors) but offerings of jewellery and even plate were made to Mr. Brett to be applied to the building fund. On July 31 the foundation stone was laid, and on June 13, 1853, the promoters saw the consummation of their hopes and labours when St. Matthias' Church—a noble specimen of Butterfield's work in his earlier and more chastened method—was consecrated by Bishop Blomfield in the presence of a large gathering of churchmen and churchwomen, on which occasion the performance of the service to the Gregorian style of music has often been described as having been one of unusual solemnity and impressiveness. From that time forward the church has occupied a prominent place among the "advanced" ones of the metropolis, and towards the close of 1867 became an object of especial interest and attention as the scene of lawless and disgraceful riots and disturbances promoted by a knot of unscrupulous Puritan non-parishioners against the true doctrines and lawful practices of the Anglo-Catholic Church, and which were

* Mr. Oakeley was subsequently appointed to the church of St. John, Duncan Terrace, Islington, touched upon earlier in these papers as containing some remarkable frescoes by Armitage. Mr. Upton Richards' connection with All Saints', Margaret Street, was a record one, extending, as it did, from 1839 (he was assistant minister to Mr. Oakeley till his secession in 1845) to the year of his death, which took place in 1873.

* The site ultimately chosen was the old one occupied by Margaret Chapel, the congregation of that fane naturally wishing to remain where they were, though Mr. Beresford Hope and the society advocated an entirely different one. The work of demolition commenced shortly after Easter, 1850; in fact, the last service held in the old building was a celebration of the Holy Communion on the Monday in Easter week of that year. For the next nine years the congregation assembled in a temporary building in Titchfield Street, where, as time went on, the services were carried out with an increased beauty and dignity in preparation for their transference to the sumptuous temple that was rising but a stone's-throw from it. Bishop Blomfield having died in the interim, the consecration ceremony was performed May 30th, 1859, by Archbishop Tait. It may not be uninteresting to remark that the old choral fittings of Margaret Chapel found their way to Sheen Church, Staffordshire, of which Mr. Butterfield was in part architect, and where Rev. Benjamin Webb was incumbent.

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indulged in chiefly by those indifferent to religion in any shape, but to whom all chances of creating a disturbance and of upsetting peaceable people were equally acceptable. But for the vigorous and determined action of the churchwardens, and the presence of so large a body of men in the congregation, these riots would, there is no doubt, have resulted in deeds of vandalism and destruction and of personal violence towards those immediately connected with the church, as was the case seven years earlier at St. George's-in-the-East.

However, these disturbances were not only futile, but had the effect of causing the services at St. Matthias' to be attended by greater throngs than before, and to increase in richness and ritual correctness; for, with Rev. C. J. Le Geyt as vicar, and Dr. W. H. Monk as organist, the church for many years was looked up to as a model of its class, as, indeed, it had been even with a moderate ritual ever since its consecration, from the completeness with which the services were maintained.

With such dignity and grandeur were the services performed at St. Matthias', that of the immense congregation which twice filled the spacious church every Sunday, many came from parts of town remote from its locale. And this care extended even to the afternoon services on Sundays. At a quarter to three there was children's service, which, the catechising being frequently undertaken by the incumbent, Rev. C. J. Le Geyt, M.A., who had a great gift in that direction, was attended by not a few adult members of the congregation. At half-past three the Litany was chanted by a good choir, Tallis' beautiful embroideries to the setting of that office usually heard being added on the great festivals. Baptisms followed, at which the choir was likewise present and sang the Nunc Dimittis as it retired from the font to the sacristy. On Easter Sunday afternoon, the children's service having been performed at the customary hour, the after service assumed a different and festal character. Shortly before half-past three the pendant and standard coronæ of candles in the sanctuary were lighted up, and all being in readiness, a procession with cross, banners and incense—the rear being brought up by the officiant in a white cope—issued from the sacristies, and passed down the north aisle and up the nave, singing the hymn "Jesus Christ is risen today, Alleluia!" At its conclusion the Te Deum was chanted—generally to the Ambrosian setting—before the altar, during which incense was burnt. The lights on and about the Holy Table were then extinguished and a selection of Easter carols was sung, their quaint melodies and still quainter phraseology still dwelling in the mind of the writer. The late Dr. W. H. Monk—so widely-known as musical editor of Hymns, Ancient and Modern, and organist of St. Matthias' from 1852 to 1889—always presided at this service, which was held for the last time on Easter Day, 1878, when a new regime was shortly afterwards inaugurated.

NOTES ON CURRENT EVENTS.

THERE are a few plain facts in connection with the preparation of sketch plans by Messrs. Webb & Bell for the new Birmingham University, which, in the face of the protest by Birmingham architects, referred to in our last issue, ought, we think, to be stated. In the first place, Mr. Webb was invited to prepare a scheme for the proposed buildings, and in no way sought the work. There is no doubt that having been urged to undertake the work, Messrs. Webb & Bell found it very much to their liking as a matter of architecture, and were glad to have the opportunity of working out such a project. But that they should be invited to hand over the scheme they have prepared—and we have reason to know it is a most masterly piece of work—to form the basis of a competition amongst Birmingham architects is really stretching matters a little too far. Whilst we sympathise with the Birmingham architects in their natural desire to join in competition for the work, we cannot help feeling that in Messrs. Webb and Bell's hands the architecture of the new buildings will be perfectly safe, and that we shall have a structure worthy in every way of the important use to which it is to be put. It might, perhaps, also be mentioned that Messrs. Webb & Bell declined the invitation to compete for the new Birmingham General Hospital, and, further, that they are acting as advisers to the Corporation in the proposed competition for the alterations to the City Council Chambers. So that they can scarcely be accused of acting in any way unprofessionally, or of seeking to take work over the heads of other architects.

WE hear that the South Shields Municipal Buildings competition has been decided in favour of Mr. E. Fetch, the second place being assigned to Mr. Rupert Savage, who won the first premium in the Belfast Assembly Hall competition. We believe the official announcement of the award has not yet been made.

HIS MAJESTY THE KING has graciously consented to continue to be the Patron of the Royal Institute of British Architects, and to offer, as was done by Her late Majesty for over 50 years, an annual Royal Gold Medal, to be presented, on the nomination of the Royal Institute, to a distinguished architect or architectural writer of any nationality.

WE understand that Mr. E. A. Gruning has contributed £50 to the funds of the Architects' Benevolent Society, in response to Mr. Macvicar Anderson's appeal made at the annual meeting of the society held last week.

THE death is announced of Mr. N. E. Jennings, an architect of Melbourne, Australia, who has been a Fellow of the Royal Institute of British Architects since 1867.

A PAPER on "Dilapidations" was read before the Society of Architects yesterday (Thursday) evening by Mr. W. J. Jennings, F.S.I., which we hope to publish in our next issue.

THE committee appointed by the King to consider the question of erecting a memorial to Queen Victoria met at the Foreign Office on Tuesday, when the report of the sub-committee was laid before the committee, who, with the approval of the King, have decided that the memorial of Queen Victoria shall be erected in front of Buckingham Palace. The Press Association says it is understood that the provision of the proposed memorial is intended to be in the widest sense a national matter, and that Parliament will not be asked to vote any portion of the cost. Obviously, therefore, the cost of the memorial, and hence, in some measure its character, must be governed by the nature of the response to the appeals.

THE election of a new Slade Professor of Fine Art at Cambridge takes place on the 11th of May next. The professorship is worth about £340 per annum, and the professor is required to give annually in the University a course of not less than twelve lectures on the history, theory and practice of the Fine Arts.

UNDER the title of "Picturesque Ireland," Mr. Alexander Williams, of the Royal Hibernian Academy, will hold an exhibition of oil paintings, water-colours, and sketches of Irish landscapes, home life, sea coast, lake and river scenery, at the Modern Gallery, 175, Bond Street, from April 1 to 27, inclusive. The exhibition is under the immediate patronage of his Excellency the Lord Lieutenant of Ireland and the Countess of Cadogan, the Duke and Duchess of Abercorn, the Marquis and Marchioness of Zetland, the Marquis and Marchioness of Dufferin and Ava, etc.

THE chairman of the Newcastle Infirmary (Sir George Philipson) received a letter last week dated from Cannes, from Mr. Watson Armstrong, heir of the late Lord Armstrong, intimating his wish to memorialise his late great uncle by a gift of £100,000 to the Newcastle Victoria Jubilee Infirmary, to be used either for a new building or for endowment purposes. It will be remembered that the then Prince of Wales laid the foundation-stone of the new infirmary at Newcastle last June, but no progress has since been made, as a bequest of £100,000 by the late Mr. John

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Hall, shipowner, was subject to an advance by the Court of Chancery. Another £100,000 was raised by public subscription for a Jubilee Fund promoted by the then mayor (Sir Ridley Lord). The generous gift of Mr. Watson Armstrong now puts the project on a clear and safe basis for immediate progress.

A REPORT has just been submitted to Musselburgh Town Council by Messrs. R. & A. K. Smith, architects, Edinburgh, as to the probable cost of erecting the proposed new municipal buildings, according to the design which they had been instructed to furnish. The estimate given is £5,804, exclusive of seating or other furnishing. The Council are to discuss the whole question at an early date.

THE Lord Chief Justice, it will be remembered, suffered from indisposition after the trial of Bennett at the Old Bailey, due, it was stated, to the insanitary condition of the court in which the case was tried. Complaint having been made to the Corporation, the Town Clerk has addressed the following letter to the Lord Chief Justice:—"Guildhall, March 11th, 1901. My Lord Chief Justice,—With reference to your Lordship's letter to the Lord Mayor I beg to state as follows:—The Corporation have caused to be prepared plans for the rebuilding of the Sessions-house, Old Bailey, which plans have been approved by all who are interested therein. The arrangement to which the Secretary of State for the Home Department obtained the consent of the Lords Commissioners of the Treasury in 1899 provided for the completion of the necessary enlargement of Brixton Prison, and the consequent transfer of Newgate to the Corporation in September, 1901. In the contract, however, entered into between the Prison Commissioners and the Corporation the date named is June 24th, 1902, and it was stated that possession could not be guaranteed before that date. The Corporation's architect (Mr. E. W. Mountford) is now proceeding with the working drawings, and the City Lands Committee, who have the matter in hand, will be quite ready to start the work should possession be given before June, 1902. It will thus be seen that the Corporation are in no way in default in the matter.—I am, your Lordship's obedient servant, JOHN B. MONCKTON."

THE housing problem is to receive a somewhat novel attempt at solution at the hands of Mr. George Cadbury, the well-known Birmingham philanthropist. Mr. Cadbury has just conveyed to trustees an area of about 330 acres in the parishes of Northfield and King's Norton, about four miles from the centre of Birmingham. Upon this 370 cottages have been built, and 143 have been sold at cost price on leases for 999 years, 3 per cent. being charged to those who paid less than half of the cost, and 2½ per cent. to those who paid at least half the cost. The remaining 227 cottages and shops are let to weekly tenants, and the rents of these, ground rents, etc., are paid into the Trust. There are about 200 allotments, which are in much demand from the inhabitants of the adjacent manufacturing villages. The total rent roll, exclusive of repayment for cottages sold, is £5,246 a year, which, after current expenses are paid, is devoted to the development of the estate and the building of more cottages. The value of the gift is estimated at £170,000 to £180,000.

WHEN the estate is completed it is intended with the income from it to purchase similar estates, but the intention of the founder is that such estates may be developed as manufacturing centres, one-fifteenth only to be used for manufactories, one-tenth at least to be used for open spaces, and the remainder, as on the Bournville estate, to be laid out for cottages and gardens, the buildings not to cover more than one-fourth of the land on which they are erected. The idea of the founder is that the English race can only retain its position by maintaining its physique, and that men who work in factories should be able to secure recreation without sitting in licensed houses or club rooms. Recreation found in gardening, for instance, instead of costing money, will produce from one-eighth of an acre vegetables and fruit worth at least 2s. 6d. per week; thus yielding a good return to the cultivators, and encouraging a larger use of vegetable diet by their families.

IN connection with the reading of the paper on the Rowton Houses at the Architectural Association meeting last Friday evening, by Mr. H. B. Measures, the architect, it is interesting to note that a Rowton House, similar in all respects to those erected in London, has just been built in the centre of the city of Milan. It has been put up by a limited liability company (Societa Anonyma) under the title of "Alberghi Populari," and contains 600 rooms, the cost having been over £40,000. Not only have the details of construction of the London houses been adopted, but the fittings and furniture are precisely similar, the bed fittings, indeed, having been purchased in this country. The shareholders are almost exclusively Italian, but the house, which will be opened in the course of the next few days, will be managed upon English lines. The price to be charged will be 50 centesimi per night, or three lire and a half weekly, as compared with 6d. and 3s. 6d. respectively here; but the directors are confident of a commercial success, Milan being the largest industrial centre of Italy, with a present population of upwards of 600,000 inhabitants.

THE Dean of Lichfield lately announced in a letter to the clergy of the diocese that at last, after an expenditure of about £105,000, the fabric of the Cathedral was in substantial repair throughout, and, as far as he could judge, all the worth of statuary and ornamental work destroyed by the Parliamentarians during the siege had been renewed. Before 1892 £80,000, or more, had been spent on the restoration. In that year the Dean and Chapter asked for £14,000 to complete all that was necessary to be done, but they have received no less than £24,000, of which nearly £9,000 was especially for sculpture and ornament. Since 1892 there have been three marked epochs in the work of reparation. In 1895 the Lady Chapel, with its seven large windows of splendid 16th century Flemish glass, was enriched by two more of the same date and school, accidentally discovered; by a highly-decorated triptych carved by the peasants of Ober Ammergau; by ten beautiful alabaster statues of the virgin saints of the calendar, and many other rich ornaments, at a cost of £3,000. In 1897 the Chapel of St. Chad, which had been destroyed in 1643, was fully restored, and all the windows were filled with stained glass at a cost of £1,200 given by the Dean, Dr. Luckock. The last epoch is the present festival, when numerous very costly offerings were made, including 47 statues of stone and alabaster, bringing the number up to 200 and leaving not a single niche vacant within or without. No fewer than 18 or 20 windows, some very large, have been lately filled with stained glass. All the work has been carried out under the direction of Mr. John Oldrid Scott, F.S.A., by Mr. R. Bridgeman, of Lichfield.

REPLYING to a question put in the House of Commons on Monday evening, Mr. Akers-Douglas said he believed the London County Council would be ready to commence the widening of Piccadilly in the ensuing summer.

A LITTLE while ago Mr. Blashill, our late London County Council Architect, described London streets as worse kept than those of most chief Continental cities. Now Mr. Woodall, the well-known gas engineer, tells us that London, which saw the first gas company started nearly 100 years ago, is at the present time the worst-lit capital in Europe. In the course of his address the other evening, as President of the Southern District Association of Gas Engineers and Managers, he remarked, to return to London from Vienna, Berlin, Paris, or Brussels was to pass from light and cheerfulness to dismal darkness. Yet gas was far cheaper in London than in any other capital, and its quality was higher. This condition of things was a scandal, a reproach, and a danger. Ignorance of the possibilities of gas lighting could not be pleaded, for in spots, here and there, the gas-lighting was splendid, the best in the world. This was the most remarkable feature of the situation. The public, he contended, had a right to a better service. The gas lamp had been called the policeman's best friend, but he wished to put its reputation higher than that. Above the prevention of crime and the facilitation of the arrest of the criminal was the cheering influence of good light and plenty of it on the moral and social sides of the people's life. To improve the public lighting of any locality that might be named would only be an affair of a week or two,

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and the opportunity of a general levelling up of practice was now offered to London by the creation of the new metropolitan boroughs.

OUR ILLUSTRATIONS.

PUGIN STUDENTSHIP COMPETITION.

DRAWINGS BY J. A. FORBES-SMITH.

MR. J. A. FORBES-SMITH well deserved the Meda of Merit awarded him in the recent Pugin competition. His studies were numerous and of excellent quality, both vigour and refinement marking his drawings. We publish to-day his admirable record of that well-known typical example of perfected English Gothic, Heckington Church, Lincolnshire, and also the beautiful sadiliae at Hawton Church, Norhants.

A CORRECTION.

WE regret to have to apologise for two extraordinary printer's errors which appeared in our description of Gunnerton Church in last week's issue. By one of these a considerable injustice was done to the architect, Mr. John Hawes, for the cost of the church was put down at £8,000 instead of £800, although the figures were most plainly written in the copy. Of course the difference between the amounts is too palpably absurd, and we can only suppose that the imagination of the printer's reader had on this occasion run away with his intelligence. In another place in the same article he credits the "front" of the church with being 800 years old, whereas it is the font which has achieved such a distinguished record in the matter of age.

THE ART OF PICTORIAL MOSAIC.

LECTURING upon "The Art of Pictorial Mosaic" before the members of the Royal Institute of British Architects on Monday evening last, Mr. C. Harrison Townsend remarked on the paucity of published matter dealing with the history and practice of mosaic work as a whole. M. Gerspach's "La Mosaique," and Professor Middleton's short article in the "Encyclopædia Britannica," represented the only endeavours towards a general history or a comparative criticism of the art. For the purposes of the present paper he proposed to consider the subject from the period when Christianity claimed the aid of mosaic work. The earliest examples handed down to us are of the fourth century. Ciampini's theory that the Church of St. Costanza in Rome had been originally a temple of Bacchus was based on the nature of the ornament; but M. Müntz holds that the mosaics are of Christian origin, though under strong Pagan influence. A fragment of mosaic found in the cemetery of St. Callisto, Rome, and now in the Vatican, is apparently of the fourth century, and is interesting as being probably the earliest representation of the traditional features of Christ. The home of the martyrs, Pudentiana and Prassede, consecrated by the Pope in the second century, was largely altered in the fourth to adapt it to the purposes of a church, when the very beautiful mosaic work, still existing though much restored, was executed on the vault of the apse. This work, which shows the high level to which mosaic art had attained in the fourth century, may be regarded as a compendium of the early or Roman manner, untinctured by the influence, later to be predominant, of the Greek canons and ideals. Constantine, after his removal of the seat of empire to Constantinople in 330 A.D., especially favoured the mosaic artist, and during his reign and that of his immediate successors a great number of churches in the eastern part of the Empire were beautified by this art. St. George's, Thessalonica, was cited. The mosaics in the Baptistery at Naples are of the fourth century, which closed under the growing influence and domination of the Eastern or Byzantine.

In the fifth century (*c.* 422 A.D.) the Empress Galla Placidia, widow of Constantine II., made Ravenna her seat, and it is to her that the city owes three of its treasures—the Baptistery of the Orthodox, the Chapel of the Archbishop, and the Mausoleum of the Empress herself. Describing and illustrating the mosaic work in these buildings, the author drew attention to the pagan symbols introduced in the Christian subjects represented, and remarked on the distinctively Roman treatment of the forms depicted. The very beautiful work in the Mausoleum of Galla Placidia seems, with its absence of gloom yet its dignity of invention, its Roman forms yet its Christian thought, to form the typical example of the fusion of the new and the old creeds. Other examples of fifth-century work still existing were referred to, viz., those at St. Ambrogio, Milan, and St. Sabina, Rome, and the series of mosaics on the Triumphal Arch of St. Maria Maggiore. These latter are particularly important among the early works of Byzantine art, and show the last effort for many centuries towards dramatic representation, before pictorial art became crystallised into conventional and traditional forms. The fairly precise reminiscences of the fifth century contained in the mosaic work of the Basilica of St. Paolo fuori le Mura, which retains the scheme of the original mosaics of Pope Leo I. (440-461), show how the earlier—the Roman—symbolism was passing away.

The sixth century is rich in material for study, in both the Eastern and Western portions of the Empire. The gorgeous mosaics at St. Sophia, Constantinople, completed under Justinian in 559, lay concealed for many centuries under coats of whitewash. But in 1847 and 1848 an opportunity of studying the Bysantine mosaics occurred, and Salzenburg made his well-known series of drawings of the old work. Judging from these, there seems to have been a consistent scheme of decoration, a general tone of harmonious quiet colour, with silver largely used for the high lights, and soft green or blue folds in the drapery, and throughout a feeling of the antique or Roman style as it began to be influenced by the sterner, more rigid canons of the East. Touching the present condition of the mosaics of St. Sophia, the author stated that five years ago he examined, with the aid of strong glasses, the ceiling of the gallery, and came to the conclusion that the present whitewash serves as substitute for now absolutely vanished mosaics! The author then passed to sixth-century mosaics at Ravenna, describing those at the Baptistery of the Arians, or St. Maria in Cosmedin; St. Apollinare Nuovo, built in 500 A.D. for the use of the unorthodox, and converted into a Roman Catholic Church in 570, traces of both influences being present in its treatment; St. Vitale, built A.D. 526, and utilised as a model for St. Sophia, Constantinople; and St. Apollinare in Classe, still, for all its sadness of decay, a magnificent contribution to the history of the art. Regarding the art at Rome at this period, the dominance of the Northern races, after the accession of Theodoric in 493, had led to the selection of subjects appealing to and models selected from the strenuous and vigorous Northerner rather than the dreamy and ascetic Eastern. The work is characterised by freshness of treatment, but with a kind of grim hardness in the type of countenance selected—the Roman ideal at base, but with an all but barbaric respect for physical strength.

Seventh and eighth century examples—St. Agnese fuori le Mura and St. Theodore, Rome—were briefly described.

The achievements at Rome and Constantinople during the ninth century must be contemplated in the light of the great dispute of the preceding century as to the representation in religious subjects of the human or divine-inhuman form, and the effect that the various Church rulings had exercised on Christian pictorial art. The result was to check the art along the particular lines affected, but to lead to a reaction during the following century, and the ultimate production of many great and important works. Works of the date referred to include the mosaic in the sanctuary of St. Ambrogio; the very beautiful and gorgeous mosaics of the Church of St. Prassede, Rome; and those at St. Marco and St. Cecilia, Rome.

From the second quarter of the ninth century till near the middle of the twelfth the art underwent in Rome a period of absolute stagnation. During this period, however, notable work was done at St. Mark's, Venice—work

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in which a Greek or Byzantine influence is manifest. At Torcello, in the twelfth century, a magnificent mosaic was placed on the apse ceiling.

The existence of a purely Sicilian school in Sicily is doubtful; it would rather seem that the Normans, under Roger II., called to their service Greek artists. There is much similarity of sentiment between the St. Mark's and the Sicilian work. Reference was made by the author to the work of the twelfth century carried out in the following buildings:—La Motonara, Palermo; the Cappella Palatina; the cathedral at Cefalu, in which the characteristics of Sicilian work, and its affinity with that done at the same time in Venice, are evident; the Monastery of Daphne, near Athens; the Church of the Holy Sepulchre, Jerusalem; and the Church of the Nativity, Bethlehem.

In the Western world the twelfth century produced at Rome the apse of St. Maria in Trastevere, the character of the work still Roman rather than Greek or Byzantine; St. Francesca Romana, often ascribed to the ninth, but, as De Rossi maintains, really of the twelfth century—a very unusual and beautiful design; St. Clemente, Rome, dated by M. Gerspach as of the thirteenth century, but which the author placed as early in the twelfth, the work exhibiting a treatment rather apart from the usual *motifs* of Roman work.

In the thirteenth century the great scheme at St. John Lateran was executed for the Pope Nicholas IV. by the master-artist Jacopo di Torrita or Torriti, the design being signed by Jacopo and his worthy assistant, Cameroni.

The author next discussed the mosaic decoration carried out in the same century in the Baptistery at Florence and in the Cathedral at Pisa, and the further prosecution in the thirteenth and fourteenth centuries of the mosaic scheme for St. Mark's Venice.

At Torcello the school of mosaic work showed a pronounced difference of aim and style from that of the same period in Venice. In this more Byzantine manner was executed the strange composition on the west wall of the cathedral—a work more probably of the fourteenth century than of the twelfth, to which M. Gerspach assigns it. The Greek mosaists had now become widely spread over the north of Italy, and had done notable work at Florence, Pisa, Siena, and Orvieto.

Rome saw two important works achieved in the fourteenth century, of which perhaps the principal was the completion of the fine work in the apse of St. Maria Maggiore, commenced by Jacopo de Torriti, and of the panels below it executed by Gaddo Gaddi.

In the fifteenth century Baldovinetti executed one of the overdoor spaces at the Baptistery, Venice, and his pupil and Michel Angelo's master, Domenico Ghirlandajo, commenced in the Cathedral the decoration of the Chapel of St. Zenobio. The really important work of this century occurs in the Chapel of the Mascoli in St. Mark's, Venice. These represent the principal legends of the Virgin, and in composition, colour, and execution are alike admirable. It is with these panels that one approaches the end of the art of mosaic work; from this point one sees the mosaist, designer and executant in one, make room, to the ultimate destruction of his art, for the painter, who called to his aid the "dull mechanic" hand of a workman to represent servilely oil-painted pictures by means of cubes of glass.

The state of design rapidly became worse and worse. The seventeenth and eighteenth centuries saw work accepted and praised, though it transgressed, in its realism, its exaggerated movement, its rendering of accidentals, all the rules and canons that should regulate mosaic work.

But it was reserved for the nineteenth century to strike the worst note of imitation, and not only to execute indifferent mosaics, but to falsify the history of the Church as recorded by and on its walls, by treating their mosaic designs as pseudo-thirteenth-century work.

The author concluded with some observations on recent mosaic art in England. It cannot be said that some of the works are successes, save as to execution. The artist seems unwilling to suppress, as the loyal mosaist should, many of the attributes of which, under other circumstances, he might justly be proud. The author expressed his conviction, however, that it would have been impossible to find in either France or Italy an artist who would have carried out work recently executed in England without falling still more egregiously into the errors which the great examples of the past showed to be present therein.

THE WORK OF PROFESSOR COCKERELL, R.A.

MR. J. M. BRYDON lectured to the members of the Edinburgh Architectural Association on the 13th inst., on "The Work of Professor Cockerell, R.A." In the course of an appreciation of Cockerell's great work as architect and student of sculpture, Mr. Brydon spoke of the architectural environment of his time. Then the battle of the styles was in full swing, and there was found in Cockerell a great artist and scholar who combined the adaptability of the Italian with the refinement of the Greek, while all through his work there ran the impress of the individuality of the man himself.

In connection with the design of the National Monument on Calton Hill, Mr. Brydon admitted that Cockerell's participation in that work came as a surprise to him as doubtless it would be to some of his audience. Cockerell's original sketches and drawings (which were exhibited to the meeting) were the first idea of the monument, which was to be a reproduction of the Parthenon. The foundation-stone was laid in 1822, and Cockerell's sketches enabled one to see the mode by which the interior of the monument was intended to be lighted. The method seemed to forestall the clerestory theory of the lighting of Greek temples. There were also shown the working drawings by Playfair of the portion erected in 1826. Between the preparation of Cockerell's sketches and the laying of the foundation-stone of the actual commencement of the work from Playfair's drawings, said Mr. Brydon, there was an interval of some years, and one could only conjecture that something had occurred which caused the transference of the work from one architect to the other, or that the two architects went in conjunction under some arrangement, the traces of which were now lost. The two must have been congenial spirits, alike in their knowledge and devotion to the study of Greek art. Vaulting ambition again, however, overleaped itself. The monument was never completed, and to day it looked more like the ghost of the Parthenon that was. Nevertheless the spirit of the Greek temple was in the fragment on the Calton Hill. Its exquisite proportion, its beauty of detail, showed the artist's true spirit. Fortunately also were they in the magnificent stone of which the fragment is built—being as sharp as on the day in which it was put up. The site plan curiously was not among the Cockerell collection. Whether that was sent to Playfair or not he could not say. There was no doubt the intention was to represent the Parthenon. In the elaborate account of the laying of the foundation-stone there was curiously not a word said about the architect. It had always been his impression that they began the building with the idea that they were going to make a reproduction of the Parthenon, and that they went on until the money stopped. Playfair's drawing was the contract drawing for exactly the piece that was built and nothing more.

In the discussion following upon the paper, Mr. Hippolyte Blanc said the information about the monument was certainly new to him. The question of the completion of the monument had been recently opened up as a suggested memorial to the late Queen, but he could not but feel that with the evidence of the intention to build only a certain part of the structure there was a sacred thought in the minds of those who had schemed the monument that it should never be other than the suggestion of a ruin.

On the motion of Professor Baldwin Brown, Mr. Brydon received a hearty vote of thanks.

IT is proposed by the Electricity Committee of the Manchester City Council to erect a temporary generating station at Stuart Street, Bradford, to provide electric power for running the tramcars over many of the routes in the city by the summer of 1902. This plan, it is stated, will enable the Corporation to meet its obligations to outside authorities and to the Tramways Committee with regard to the tramways.

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CHURCH OF S ANDREW. HECKINGTON.

DETAIL OF PORCH.

SCALE

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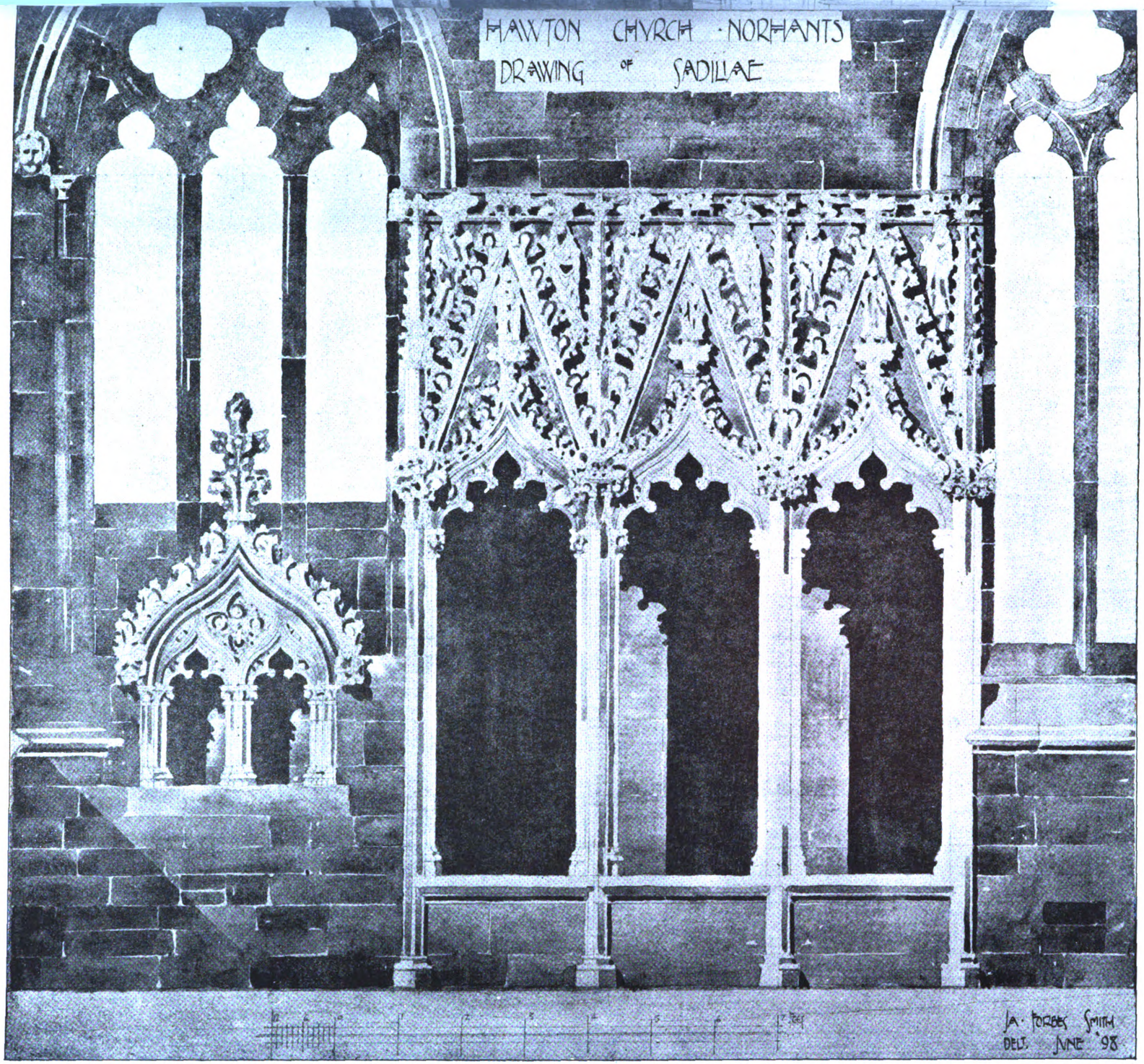

PUGIN STUDENTSHIP DRAWINGS. MEDAL OF MERIT. AWARDED TO J.A. FORBES SMITH.

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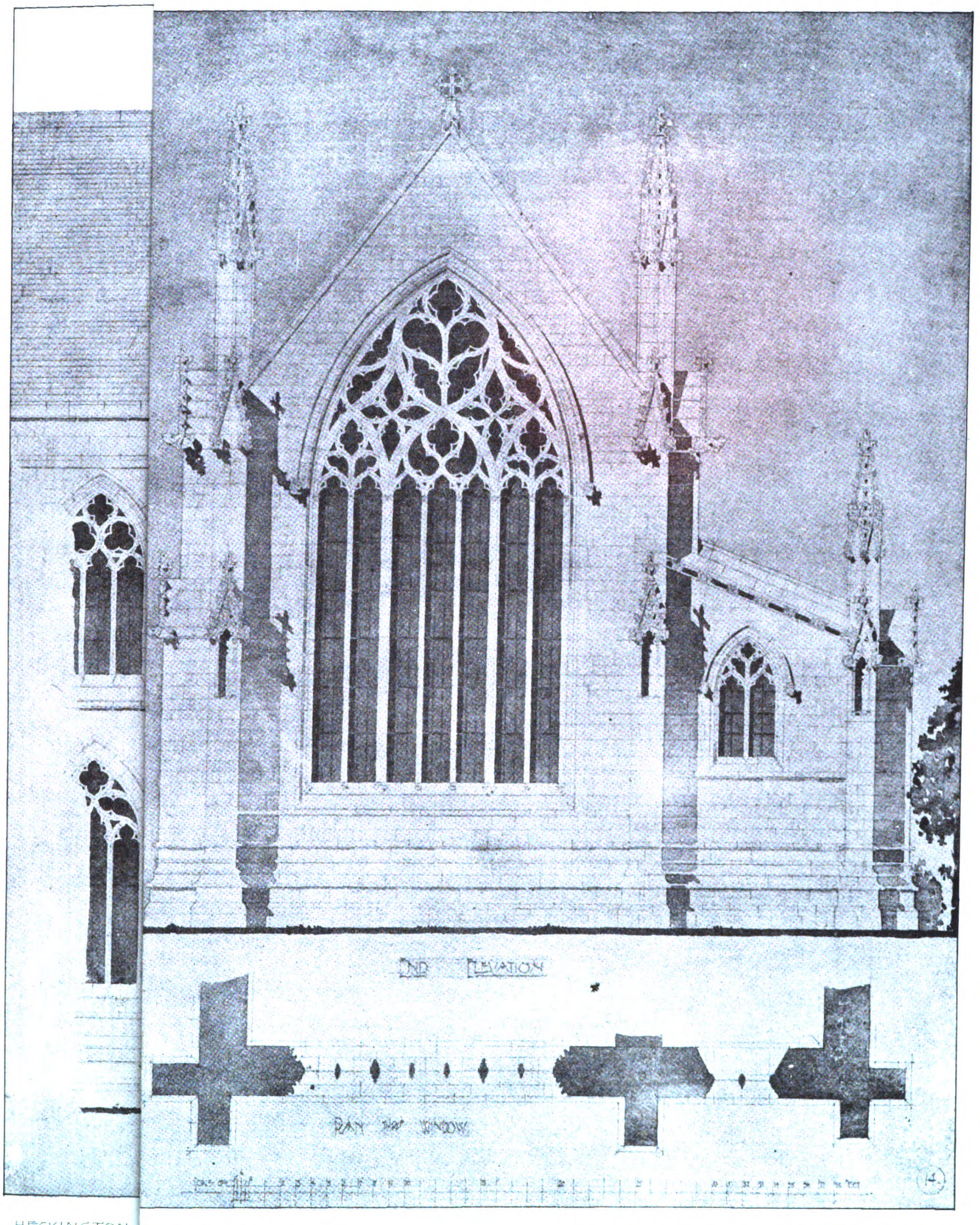

HECKINGTON ST END OF CHANCEL

MEASURED & DRAWN By J A FORBES SMITH. 1898.

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THE ROWTON HOUSE, NEWINGTON BUTTS.*

By H. B. MEASURES.

TIME will not permit of a detailed description of each Rowton House, I therefore propose to describe the house at Newington Butts, containing as it does practically all the essential features of a building of this description, and moreover, because the site is one which both in frontage, depth, and general disposition, is as near as possible an ideal site for the purpose of providing accommodation for 800 men.

It is situated in a very crowded neighbourhood, frequented by the class of men who have in the past had to crowd into small houses as the lodger, or go to a common lodging house, with all its degrading surroundings. For the workman the position is one affording exceptional facilities for access to the heart of London, consequent upon the proximity of railways, including the South London and the tram and 'bus routes in all directions.

The site has a frontage of 214 ft. overlooking a well-laid-out public recreation ground, the site of the disused churchyard of St. Mary Newington, and is approached by a wide footway from Newington Butts. The depth of the site from front to back is an average of 138 ft.

The building is set back from the forecourt railing a distance of 10 ft., and as the ground floor is 4 ft. above paving, ample light is obtained for that portion of basement which is on the front of the building; at the back the main building is set back a distance of 25 ft. from the boundary. This gives a considerable space for light and air, whatever the adjoining owners may hereafter do on their land and, in addition, the dimension just enables the building to be erected to the height shown on section, without coming within the Building Act angle of 63½ degrees.

The central courtyard above ground has a width of 58 ft. 6 in., this is wider than I have been able to obtain at either Calthorpe Street or Whitechapel, the latter being 49 ft. 6 in. wide, which I consider gives ample width, but is not so convenient for planning the ground-floor rooms as a width of, say, 60 ft. You will note that in all the plans, the plan of cubicle floor is based upon an elongated letter U, this I consider to be the most satisfactory form for planning, and preferable to an enclosed quadrangle; with the latter it may be possible to produce a large central staircase, but I do not advocate such in preference to those shown. The shape adopted gives an abundance of light, sunlight, and fresh air into the courtyards, and lends itself to the disposition of staircases at the extremity of each arm. I need hardly point out to you that with the staircases planned as on all the drawings before you, it is impossible for a man to be trapped in the event of fire, a thing that is likely to happen with a central staircase unless panic stairs are provided—these are expensive and would probably be overlooked in case of need.

The elevations are built in pressed Leicester bricks and mingled gaults, and the dressings in pinky buff terra-cotta. The whole of the interior walling is built with gault bricks, excepting where glazed brickwork is used. The brickwork throughout the building is in Portland cement.

The floors are breeze with steel joists, the breeze covering the underside of joists 2½ in., the top screeded over joists for flooring.

The front roof is constructed of breeze slabs 4 in. thick, with angle iron therein, and the slating nailed direct on to the slabs, all other roofs are flat, of breeze and steel construction, covered with asphalt.

For administrative purposes the house is divided into five sections as follows:—

1. Lodgers' day-rooms.
2. Lodgers' cubicles.
3. Catering section, which includes sleeping accommodation for females employed in shop, kitchen, and scullery.
4. Bed-makers.
5. Superintendent's apartments, with separate accommodation for the office clerk.

*From a paper on "Rowton Houses," read before the Architectural Association on Friday evening the 15th. inst.

If you will allow me for the purposes of this paper, I will assume that you are accompanying me upon a tour of inspection, following very much the course that a lodger would take. On entering the building, an office is provided in the vestibule; here the lodger makes application for a bed ticket, for which he is charged sixpence; this frees him to the use of all the day-rooms of the house and separate sleeping accommodation for one night. If he desires to do so, an opportunity is allowed him of renewing his bed ticket up to 9 o'clock at night, before which hour no new lodgers are booked, or he may take a bed by payment of 3s. 6d. for a week. A lodger can renew his cubicle from day to day, or by the week, so that he has the exclusive use of it. The office front and fittings in same are in polished teak, and a safe is provided for the custody of any valuables or money given in charge of the clerk. Opposite the office window turnstiles are fixed; they serve as a "moral barrier," it being impossible to use them for checking purposes, as the lodgers are in and out of the building at all times. The space beyond the vestibule is a provision not only to give room where there is much traffic, but, in addition, to give sitting accommodation in what is a favourite place with the lodgers to watch the arrivals. These spaces and the corridors leading from them past all the day rooms to the two cubicle and basement staircases have glazed brick walls from floor to ceiling, with a dado in chocolate and cream-coloured bricks and ivory above. The floor is cement and granite chippings. Water for drinking is laid on to point shown in plans.

The dining-room has a floor space of 5,300 ft., and seating accommodation is provided for 440 men at tables; a number of extra seats and wooden easy chairs are placed in the room. The walls have a glazed brick dado in chocolate and cream, 4 ft. 9 in. high, with plastering above distempered to tint. The floor is of oak blocks laid herringbone. The tables and seats are teak, carried on cast-iron standards, the length being 7 ft., giving a provision for eight at each table. Four large cooking ranges, with ovens, hot plates, and grills are provided. These you will note are placed out of the line of traffic, and are built into glazed brick chimney breasts from floor to ceiling; this is necessary, as plaster work becomes discoloured in a very short period.

The portion of dining-room between the front and back wings is, in addition to windows, top-lighted and ventilated by four lantern lights, the whole of sidelights of which open for ventilation; in addition, all the windows are hinge-hung to fall in above transoms, and casement-hung below, the latter being secured by a latch, and usually only opened for cleaning purposes; ventilation flues are also provided in walls.

A lodger may purchase cooked or uncooked food at the shop, or he is at liberty to bring his own purchases from outside and have the free use of the ranges, cooking utensils, and lodgers' scullery for the preparation of such food. You will note by reference to the photographs in the room that the walls are hung with framed engravings of many popular pictures, a feature in the furnishing which appears to be much appreciated. Between the two large sections of the dining-room a lodgers' scullery is provided with walls built in glazed brickwork from floor to ceiling, fitted up with glazed fireclay sinks and teak draining boards. Sanitary pails are under each sink for the reception of potato peelings, tea leaves, etc.; hot and cold water is carried to each sink, and, in addition, a supply of boiling water is provided for tea-making, etc. This scullery is an essential, as otherwise the dining-rooms would be used for this purpose.

The crockery and service room between the dining and smoking rooms is built in glazed brickwork from floor to ceiling and fitted up with shelving. This is provided for those who cook their own food, and is furnished with pots, frying-pans, teapots, plates, cups and saucers, which are at the lodger's service, and which he leaves where used by him, to be collected by porters, who send them down the lift shown to basement scullery.

The shop has a teak front with sliding sashes, and is fitted up with counters in teak, hot plates, urns, and drawers and shelving for the varied assortment of articles sold. A tobacco licence is held. The prices charged are practically what would be paid outside at a coffee-house. The lift shown delivers into a service lobby outside kitchen

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and also into the scullery on basement, and the staircase gives access to same.

The smoking-room is approached from corridor and from dining-room. The floor space is 1,600 ft., and is fitted up and finished in a manner corresponding with dining-room; the seating at tables is for 112, with an additional seating accommodation in wooden easy chairs. The chimneypieces are in glazed faïence, and large open fires are maintained. Although this room is called the smoking-room, smoking is allowed in any portion of the building used by lodgers during the day. This room is at times of pressure—say on Sundays—used as an overflow dining-room with service from shop where bay is shown.

At the back of building is the reading-room. This is an L-shaped room with an area of 2,550 ft.; the walls have glazed brick dado with plastering above as in dining-room, the chimneypieces in glazed faïence. Seats at table provide for about 170 men, and a large number of easy chairs are provided around the fireplaces. It is very seldom that one can visit the house without finding each fireplace with its semicircle of men, reading, talking, or having a nap. You will notice that in all these rooms the doors are set into a recessed lobby; this allows them to open outwards without projecting into the corridor, and, in addition, it is possible for the superintendent to obtain a view of the room while standing in this lobby to see that order is maintained.

The walls are hung with pictures, and two large teak bookcases filled with the works of a variety of authors are provided. Books are lent to lodgers on application to the superintendent. Games, such as draughts, dominoes, etc., are placed in the room.

Adjoining the dining room you will note the locker corridors. The position assigned to these is the most convenient where planning will permit, as they are used for storage of food to a great extent. In the house under notice they are 1 ft. 6 in. in cube, with a shelf dividing into two parts. Of these lockers there is a provision of 800; they are arranged in tiers four in height, and each locker is ventilated and numbered and has a separate key. Above these lockers a number of larger lockers of double the cubic capacity are provided for those who require additional space. Provision is made in them for a stick or umbrella, and a shelf similar to the smaller lockers. The charge for a small locker or a large is 6d. and 1s. respectively, and upon the return of key 5d. and 10d. respectively is returned, which to a regular lodger is to all intents a charge of 1d. or 2d. for a year or more. In the locker corridors small tables are placed against the piers for brushing or sorting articles in lockers. The corridors are lighted and ventilated at ends by windows, in addition to top lighting and ventilation.

The water-closets and urinals for day use are placed at the rear of building, and are disconnected from it by a ventilated lobby. The walls, partition walls, and divisions to urinals are all ivory glazed brickwork. The roof over is in lantern form, glazed from end to end, in T-iron bars, with vertical pivoted louvres. There are 41 water-closets, being a provision of one for every 20 men. The division and front walls are 6 ft. 3 in. high with a moulded capping and open above; each water-closet is fitted with a flushing cistern, having an iron supply pipe to pan. The pan and trap used are of the short hopper type, or glazed brick "soap size" is used for risers, and the whole of the space inside same, around pan and trap, up to the top of pan is filled in solid with cement concrete. This is found to be a perfectly effective means of avoiding breakages, wilful or otherwise. The seats are teak, bedded and screwed down on the concrete. The doors are kept up 3 in. above floor for ventilation. The door stops and the hinges are slightly out of the perpendicular, the effect of which arrangement is that, excepting when the door is bolted, it automatically opens back on to the division wall, and by that means a lodger is always able to find which water-closets are unoccupied. The door frames are dowelled down to 3-in. cement base blocks. The floor of water-closets is laid with a fall towards door, and constructed in concrete with granite chippings. The urinals are white glazed fireclay backs, finished on the front edge with 9-in. double bull-nose divisional piers, which are carried to a height of 5 ft. The top of urinal backs is covered down with slate overlapping copper sparge pipe with automatic flushing. This mode of construction has been found to stand, undamaged, the hard wear in each house. Adjoining these water-closets, near the foot of main staircase, a room is provided for fumigating bedding or other articles.

At the extreme end of back corridor a staircase is constructed, giving access to the roof over the portion of ground floor rooms within the centre courtyard; this roof is at first floor level and is paved with asphalte, fenced in and provided with seats as an open-air lounge and smoking space; it appears to be a much-appreciated feature.

BASEMENT.

The two main staircases are continued down at the end of ground floor corridors to the basement, a corridor leads from each into the lavatory. In passing, I might say that the whole of the basement, where used by the lodgers, is built in glazed brickwork from floor to ceiling, and all the floors are cement concrete finished in cement and granite chippings.

The lavatory has a dado in French grey and ivory, with ivory above.

There are 80 basins, fitted with hot and cold water supply, the construction being as follows:—Each set of 10 is carried on three divisional walls with angle-iron bearers to carry slate top; the basins are white enamelled fireclay, with outer rim bearing on iron bar on edge, bearers shaped to basin, and bolted to outer angle irons. Immediately under the slate top two horizontal water pipes, hot and cold, are carried from rising mains, on main walls, through to end division, with a plug for clearing in the event of a stoppage; branches rise vertically to gun-metal screw-down cocks. Iron waste pipes are used, discharging over channel in floor; for basins, loose turned wood plugs are used. The floor is laid with falls to the channels under these lavatories. Towel rails are fitted at ends of ranges and on walls, with round towels supplied thereto. Central over each range of basins and running longitudinally a hat and coat rail is fixed.

A portion of lavatory is screened off by a glazed screen, and fitted up with white glazed fireclay feet washing baths, with teak draining boards between each. Hot and cold water is carried to each, and the wastes discharge over a channel similar to the lavatories. I consider this room to be a great boon to the men, and it is much used by them. Towels are provided. In the front corridor leading from lavatory to the foot of main staircase you will note there are bath and dressing rooms; the walls are divisional walls 6 ft. 6 in. high, in glazed work, and the baths are white glazed fireclay, with a riser of glazed brickwork, and finished with a teak top. I might mention here that baths uncased were tried in the first house, but the space around them, next to the walls, too often proved a receptable for discarded underwear. Hot and cold water is laid on to each bath. A lodger pays 1d. for a bath ticket, which includes soap and towel; the water is turned into bath by the attendant. A chair completes the furnishing of bath-rooms.

The dressing-rooms are, to all intents and purposes, as bath-rooms, minus the bath. As no lodger is allowed in his cubicle during the day-time it was considered, and found to be, necessary to provide accommodation to enable him to change his garments.

In the corridor connecting front and back staircase you will find a room described as "the lodgers' washhouse." Here, and particularly on Sunday, many wash the whole of their wardrobe of underwear, for which purpose white-glazed fireclay washing-troughs are fixed on walls, with hot and cold water supply and draining-boards. A wringer is part of the equipment, with tables for the folding or sorting of garments. A Gill stove, surrounded by a galvanised-iron framework clothes'-horse, is used for drying. In the same corridor, adjoining the lodgers' washhouse, is the porter's day-room. This is fitted with lockers, tables, and easy-chairs for the officials' use during their leisure and at meal-times. On the opposite side of corridor two rooms are allotted to a repairing shoemaker and a tailor, who find constant employment from the lodgers. Returning to the main back corridor you will note a space between porter's room and lavatory; this is used as a boot-cleaning and clothes'-brushing space, tables and foot-rests being placed therein. Opposite this space is another partly in use, the unused portion being a provision for extra locker accommodation, that in use being a parcel-room. A lodger

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with tools, boxes, or other belongings too large for lockers can, by payment of a small fee, store them here, and have access, in company with an official, from time to time. The barber's shop is fitted up for the purpose, and provides constant employment for a barber. The knife-cleaning room and the fitter's room adjoin, the latter being fitted with vice, etc., for minor repairs.

In the furnace-room two boilers supply the whole of the hot water used by lodgers for lavatories, baths, etc.; these are connected to two cylinders, placed in linen and blanket store. A drying-room, fitted with galvanised-iron framework, is built upon the setting of boilers, and utilises waste-heat for drying purposes.

In the passage outside, at left end of buildings, all ashes and refuse from day-rooms is placed in sanitary pails for removal by authorities by the steps shown in area. All area walls and voids are in glazed brickwork.

SECTION II.—CUBICLE FLOORS.

Returning to the ground floor of building, you will note the two main staircases giving access to the cubicle floors, these are carried up the full height of building, with steps of an uniform width of 4 ft. 6 in. to the flat roofs at top where a gangway is railed in from one staircase to the other, enabling lodgers in case of fire to ascend one staircase and descend by the other. The staircase is built in ivory-glazed brickwork the full height, and the steps are formed of Portland cement with two angle-irons each, the balusters and handrail are wrought iron. On each landing, approached by a door off same, is a sink space with hot-water supply for cleaning purposes, and cold for drinking, carried to a glazed fireclay sink. On each side of sink space a watercloset is formed, constructed as those previously mentioned, for night use only. A fire-hose cupboard, fitted with hose-piping and nozzle, occupies the space marked FH on plan, the corresponding cupboard opposite being used for storage of brooms, etc., for cleaning of cubicles.

Taking the cubicle floor as a general scheme you will observe that it consists of a central corridor 4 ft. wide, extending around the U-shaped building from staircase to staircase. It is divided by partition walls into sections, varying (according to convenience in planning) of from twelve to sixteen cubicles in each. Where possible, I endeavour to plan in sections of sixteen, for a reason which I will explain when dealing with lighting, among other reasons, for the subdivision of cubicle floors into sections, are the checking and possible isolation of an outbreak of fire; another advantage is that, in a case of infectious or contagious disease, the isolation and efficient disinfection can be arranged without closing the whole of one floor of cubicles. Swing doors between each section conduce to quietness between the sections; fanlights over these open for ventilation. The flooring is yellow, nailed direct upon the screeded breeze floor. The staircase in the internal angle of front section admits of the women bedmakers obtaining access to the various floors without passing through any of the lodgers' day rooms. The space where staircase is shown on first floor is occupied on all the other floors by a linen room, with lift from clean and soiled linen rooms in basement. This is placed as near centre of cubicle corridors as possible to avoid labour in carrying. On each floor, including one on each staircase, there are five fitted fire-hose boxes, with glass panel in door for access to bolt.

A typical section of cubicles is planned eight on each side of corridor, handed right and left from the centre of section. This method of handing from the centre is one that I consider most essential; it enables each bed to be against a cubicle partition on the other side of which is the passage space of the next cubicle, and not the bed; any reversal of this arrangement means that sleeping next to a restless or noisy sleeper would be a most unpleasant experience. You will also note that every cubicle in the building has its own window opposite the door, leaving a pier against the head of sleeper; those of you who have had the misfortune to sleep with the head immediately under the chilled atmosphere at a window will realise that this is not a small point in planning. The windows all have a high bottom bead permitting the raising of sash for ventilation at meeting rails, and the sashes are double hung and of an uniform width of 1 ft. 6 in. in the brickwork, carried up to within a few inches of ceiling. The framing for cubicle partitions is 3 in. chamfered frames filled in with 1⅛ V-jointed and tongued boarding, painted to a cream shade and twice varnished. The cross partitions are 7 ft. 6 in. high, and the partition next corridor 6 ft. 6 in. high, the height of cubicle floors from floor to ceiling is 9 ft. The door of cubicle is kept up 2 in. above floor for ventilation, and has a bow handle outside and bolt inside. At the foot of bed three hat and clothes hooks are fixed with a shelf projecting over and covering same, making it impossible for garments to be lifted off hooks over the partitions at night by other lodgers (a necessary safeguard). The cubicles are, excepting where breaks on elevations increase their length, uniform in size throughout the building, the mimimum standard of 5 ft. wide by 7 ft. 6 in. being adopted, the space at the end next corridor permitting the drawing out of bed for making and the hanging of clothes on pegs; the minimum floor space of each cubicle is, therefore, 37 ft. 6 in., and the cube air space taking half the corridor for each cubicle is a minimum of 427 ft. 6 in. I may add here that to provide for ventilation independent of the windows in cubicles, which the occupants may keep closed, windows are planned at the end of corridors, and these, the fanlights over swing-doors, and the staircase windows, enable the officials to let a current of fresh air through the various sections. With reference to the cubicle partitions, I have had various opinions from architectural friends as to the material used, some advocating one material, and others another. I can but give the result of experience extending over seven years' user of these partitions, and it is, that although there have been several attempts to set them on fire by setting a light to the bedding, they have charred only, they are not troublesome in dealing with an occasional case of vermin. I have been surprised myself to find that they are free of carving or writing, and that any damage by the shifting of bed has been of the nature of an indentation of the surface only, whereas, where plaster is used on the external and other walls, damage is done, which is not easy to make good. While speaking on this matter, I would claim your indulgence, when viewing a Rowton House outside, for the regularity of windows and piers I have told you my reasons for the arrangement of windows and piers so far as they affect the sleeper. From time to time I am asked, why don't you group your windows? If I yield to that temptation, then the sleeper has to pay the penalty for the sake of my elevation. Personally, I think the sleeper comes first, and that my elevation should truthfully proclaim it. On the top floor of building, at the top of sloping roof, you will notice a row of cubicles. These are on one side of corridor only (excepting in gables, where they are on both), and the dormers on front are a provision for cross ventilation. On each floor two rooms are reserved for officials, who sleep there and are responsible for order. They are fitted as small bedrooms, and the space from top of partitions to ceiling is glazed for privacy. The staircases are lighted by a point on transom of door leading to sink space. This gives in addition sufficient light into sink space and water-closets through glazing of fanlights and doors. Taking a typical section of sixteen cubicles, two gas points are sufficient for lighting. Each is set opposite the second cubicle partition from door, and thus lights four on each side. There is not sufficient light for reading in bed, but ample for undressing.

The gas points on staircases and at points in ground-floor corridors are alight all night, and in addition at the change of direction in corridors on cubicle floors a point is also alight all night that a lodger may be able to find his way out at any time. The other gas points are controlled from the office when necessary.

The furniture of a cubicle consists of an iron bedstead, spring mattress, a mattress cover, a horsehair mattress and pillow, two twill sheets, a blanket under same, and any reasonable number over, with a quilt, a wooden chair, and a chamber utensil.

A lodger can go to bed at any time after nine o'clock by presenting his ticket to an official at the foot of one of the staircases. One staircase only is generally used, and found sufficient. He then finds on each floor direction-boards giving the numbers of cubicles on that floor. Wrought iron gates bar access to the cubicles during the day, and at night, except by passing an official, these gates are secured by a

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weak chain and padlock, which the weight of one man will easily break. It is found to answer its purpose as a moral barrier, and its weakness removes possible danger in case of fire. No lodger is allowed to remain in a cubicle after nine o'clock in the morning, at which hour the bedmakers take possession of the various floors.

SECTION III.—CATERING DEPARTMENT.

The whole of this department is placed in the basement, and is accessible only by way of the tradesmen's entrance by passing through the office lobby, or from the superintendent's private residence.

The kitchen is built in glazed work from floor to ceiling, and has a wood block floor, excepting where cooking apparatus is fixed, where red adamantine tiling is laid. In addition to a large range, steam and gas-cooking apparatus is provided; a kitchen store is provided for cooks' use, and dwarf cupboards and dresser. Adjoining is the scullery, built in glazed work, with cement floor, fitted with large white glazed fireclay and teak sinks with draining-boards and a large range of plate-racks. A lift from here opens into the lodgers' crockery store above, and another in the shop. The larder, the walls of which are tiled, is disconnected from the kitchen by a service passage (in which is placed the lift for kitchen and larder service to shop); slate and other shelving is fitted up in same. A staircase from shop, constructed in teak, gives access to service lobby, and also to the corridor to stores and female staff-rooms. A store is provided for storage of spare crockery.

The large store-room, adjoining this corridor, is for groceries and provisions generally, it is fitted with flour, sugar, and other bins, and shelving. The linen and blanket store has the hot-water cylinders therein, as previously mentioned, and is fitted from floor to ceiling with racks for storage; in the passage portion of the store a bench extends in front of windows for the purpose of sorting linen, etc., this is then dispatched by lift in corridor to the upper floors. Kitchen coals, meter-room, and water-closet for catering staff is provided. The staff sleeps on the premises, under the reading-room, and has a sitting-room and five bedrooms; the walls of these are plastered, papered, and furnished with pictures, and the floors are wood block. A private door at basement level enables the superintendent's wife to obtain access for supervision.

SECTION IV.—BEDMAKERS.

The bedmakers are not resident upon the premises, they enter the building by the door at side of office and descend to their room, in basement, by a staircase in full view of the office; this staircase is carried up as previously mentioned to the first floor of cubicles. A room known as the bedmakers' room is provided at the foot of stairs, fitted with a small range for preparation of their meals, table and chairs. Adjoining this room is a cloak-room, fitted with sink, and a water-closet opening out of same; a door gives access to the soiled linen-room, which is built in glazed brickwork from floor to ceiling and has a cement floor. The lift delivers from all cubicle floors into here, and the dirty linen is checked into baskets and taken direct away to laundry.

THE EDINBURGH ARCHITECTURAL SOCIETY.

BEFORE the members of this society on the 13th inst. Mr. J. Stuart Syme read a paper on "San Micheli and his Work," in which, after referring to the architecture of the Italian Renaissance in general and San Micheli's position in regard to it, he gave a sketch of the life of the architect.

Micheli San Micheli was born in Verona in the year 1584, and received early instruction in architecture from his father and uncle, both of whom were architects. At the age of 16 he went to Rome, where he studied and measured many of the old buildings. Later, at Orvietto, a small town about 16 miles from Rome, he studied under Brumanti, much of whose influence can be traced in San Micheli's early work. The prime of San Micheli's life was devoted to the designing of fortresses and bastions, one great achievement in this line being the invention of a new plan of bastion, angular in plan, by means of which the attacking party at any point was met by cross-fires. In military work of this type there was not much scope for the artistic qualities of San Micheli, but there are several instances of work in this connection showing great artistic skill, as in the fortress gates at the entrances to several cities, the gates of Verona being amongst his best works.

In later years San Micheli designed a considerable amount of ecclesiastical work and a number of palaces, chief among which were the Pompei and Verzi Palaces in Verona, and the Grimini Palace in Venice, the latter being, perhaps, his masterpiece. Two monuments at Padua are fine examples of his work. San Micheli died in 1659. Chief among his characteristics were his powers of restraint and love of simplicity, qualities probably fostered by the military work with which he was engaged in his earlier years. Other qualities were his great refinement and fertility of design.

The lecture was throughout illustrated by limelight views.

TRADE NOTES.

THE ventilation of the new Town Hall at Altrincham has been carried out by Messrs. Cousland & Mackay, ventilating engineers, 150, Hope Street, Glasgow.

A MEMORIAL to the Rev. T. O. Regan, M.A., has been placed in the Chancel of Donnington Wood Church, in the shape of a stained glass window of three lights, containing the subjects of the Crucifixion, with the figures of St. Mary and St. John on either side under canopies, and the figures of St. Aidan, Matthew, and Chad in the base of the canopies. The window was from the studio of Mr. T. W. Camm, Smethwick, Birmingham.

MESSRS. POTTS & SONS, church and turret clock manufacturers, Guildford Street, Leeds, have just erected a Cambridge quarter chime clock, showing the time upon four external illuminated dials 4 ft. each in diameter, at the residence of Mr. Joseph Pickersgill, Bardon Hill, Westwood, near Leeds.

A TURRET CLOCK has recently been fixed at the new Tram Car Depot, Southport, by Messrs. Joyce & Co., Whitchurch, which shows time on two dials. The same firm have also completed the fixing of a large striking clock at Dilhorn Church, Stoke-on-Trent, and a similar one at the parish church, Faldingworth, Lincolnshire, and are also erecting a large Cambridge quarter clock and five bells at the new Town Hall, Dukinfield, Cheshire.

JOTTINGS.

IN connection with the sale of the Blyth mezzotint engravings at Christie's, it is worthy of note that the highest price ever paid at any auction in England for a single mezzotint portrait was realised at this sale, viz., 1,000 guineas, for a fine first state of the whole-length portrait, after Sir J. Reynolds by V. Green, of the Duchess of Rutland. This is said to be more than five times the sum which the artist received for painting the original canvas.

THE Sunday opening of the Victoria and Albert Museum, South Kensington, the branch Museum at Bethnal Green and the Geological Museum Jermyn Street will be, until further notice, from 2 to 6 p.m.

THE Metropolitan Electric Supply Company, Limited, have been fined £56, including costs, for laying down more mains than has been sanctioned by the Marylebone local authority.

THE parishioners of St. Mary's Church, Harrogate, last evening resolved to build a new church on the present site. It is proposed to provide accommodation for nearly 1,000 people, and the cost is roughly estimated at £10,000 or £12,000. Although no direct appeal has been made, donations and promises have been made amounting to close upon £800.

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The British Architect.

LONDON: FRIDAY, MARCH 29, 1901.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.—BUILDING AND SURVEYING.—Examinations for Certificates of Competency to act as District Surveyor under the London Building Act, 1894, and as Building Surveyor under Local Authorities, will be held at the Institute on the 18TH and 19TH APRIL.

Applications will be received until the 4TH APRIL by the undersigned, from whom forms of application may be obtained.

W. J. LOCKE,
Secretary.

No. 9, Conduit Street, Hanover Square, London, W.

THE LONDON WATER QUESTION AGAIN.

ONCE more Parliament has rejected the London County Council's Water Companies Purchase Bill. This was, of course, a foregone conclusion, after Mr. Long's uncompromising attitude towards the Council's deputation last week. But the party majority was only 77, and the general tone and temper of the debate showed a decided change for the better, though there was no mistaking the Government's real mind and intention in the matter. They regard the settlement of the question from a purely political standpoint, and have scant respect for a body like the County Council, which, in so far as it is thoroughly Progressive, is soundly Liberal in its constitution. Neither will they recognise the fact, so plain to everyone not blindly partisan, that the election of the new County Council turned more upon a question of water policy than anything else, and that party politics had little or nothing to do with it. Mr. Long, in replying to the deputation last week, declined to assent to this conclusion, and evidently regarded the Unionist members of Parliament for London as more really representative of London's wishes upon the question than the members of the County Council, who are actually and directly the representatives of the ratepayers. This, of course, is a most fatuous bit of political deduction, as also was his suggestion that the County Council was a fluctuating body, and, therefore, not fit to be trusted with the control of London's water supply! All municipal authorities are fluctuating bodies, and yet a good many of them manage to control large water, gas, and tramway undertakings, greatly to the profit and advantage of the ratepayers. Even the constitution of the House of Commons is subject to the fluctuation of public opinion!

All through, the opposition to the County Council's Water Companies Purchase Bill has been based upon purely political motives, and the Government apparently considering the political principles of the London County Council to be in opposition to their own, conceive it to be their duty to oppose such measures as the Council may present to Parliament, and which may happen to affect the vested interests of a large number of the supporters of the political party in power. And so in spite of the fact that the new County Council is so unanimously agreed upon their policy in regard to the water supply of London, and in their unanimity decidedly represent the general opinion of the water consumers and ratepayers of the metropolis, the Government have seen fit to again officially oppose that policy, and secure the rejection by Parliament of the measure designed to give practical effect to it.

To us it seems an anomalous thing that such a question as that which the London County Council have already unanimously agreed upon should be dealt with upon political lines by opposing parties. It is no question of politics, and ought not by any means to be made a party question. And we maintain that in the decision of all things affecting the well-being of the municipality party politics should have no part or lot whatever. Parliament has no reasonable right to decide against the wishes of a whole community represented in the unanimous decision of its representatives on the municipal council, simply for political reasons. And yet this great water question of London is to all intents and purposes to be decided as one simply of politics, than which nothing could be more absurd.

The chief point made against the County Council Bill on behalf of the Government in the House of Commons debate was that the President of the Local Government Board intended to bring in a Bill himself next year. Well, this might be all very good and proper if it were not likely to be so absolutely opposed in principle to the one introduced by the County Council. The idea of a Water Trust on the lines suggested by the Royal Commission is directly inimical to the best interests of the water consumers of London. For if the London County Council is not to be the controlling authority—and we are decidedly of the opinion that it should be—then it should at least be adequately represented on the body appointed to undertake the work. We agree with Mr. Asquith that to recommend the constitution of a water board of 30 members, in which the County Council should only be represented by 10 members, is absurd. For it means that the body which has three-fourths of the population and four-fifths of the rateable value should have one-third of the representation, which is simply ridiculous. If Mr. Long's promised Bill is to include such anomalies as this, it will not find much favour with the water consumers of London. There can be no really satisfactory solution of the water supply problem of the metropolis which does not give the controlling power to the London County Council, as representing the municipality and county of London.

The larger question as to the provision of an adequate supply was not really discussed in the debate. Nevertheless, it constitutes one of the most crucial points to be considered in connection with the subject of buying out the water companies. It is one, moreover, which must be dealt with in a liberal manner. There is no greater *necessity* in any community, large or small, than an adequate supply of pure water. The term "adequate" is perhaps a trifle vague, but it must be taken in its broadest and most liberal sense. We agree with Dr. Wynter Blyth (medical officer of health for Marylebone) that from a strictly hygienic standpoint "there is no such thing as waste of water, so long as the waste goes directly into the drains." Leakages into walls or basements is another matter. But "the more water a town uses the better for health." The water supply of the metropolis, in Dr. Blyth's opinion, should be practically unlimited, and if the present sources are not sufficient, then they must be supplemented with others. Fortunately for London, intelligent public opinion was sufficiently aroused to see the pernicious principle underlying the water companies' proposals for the prevention of waste, and to compel their withdrawal.

Water ought practically to be as free as the air we breathe. Yet we have become so far civilised as to recognise that we must pay—and pay handsomely—for the provision of this absolute necessary of life. But when a benevolent water company steps in and says you must only use so much for the flushing of a water closet, and you must pay so much for a bath, and otherwise dictates limits of supply for really necessary purposes, we think the public have a right to be indignant. Londoners are, however, we believe, beginning to recognise the fact that this question of a properly administered and adequate water undertaking for London cannot be satisfactorily solved on the lines of party politics. We only trust that Government may read the signs of the times in the constitution of the new County Council, and that before they produce their promised Bill they will seek to bring their own views more into line with those of the water consumers, and their representatives at Spring Gardens.

A MODERN VIEW OF LONDON CHURCH ARCHITECTURE.—XI.*

By T. F. BUMPUS.

(*Continued from page* 199.)

THE late venerable architect of St. Matthias' (Mr. W. Butterfield) was a not infrequent attendant at that church in its earlier days, walking thither from his office, which was also his residence, in Adam Street. On one occasion, when returning from the morning service at Stoke Newington, he paused near the Holborn end of Gray's Inn Lane and pointed out to a friend the site, soon to be occupied by a church in which the services were to be carried out with the same

*In the opening paragraph of the article in last week's issue the printer mixed up a couple of lines and made "pie" of them. They should have read: "So with this object we will proceed to marshal their external and internal characteristics, which from the consistency of their distinguished author, have a striking affinity."

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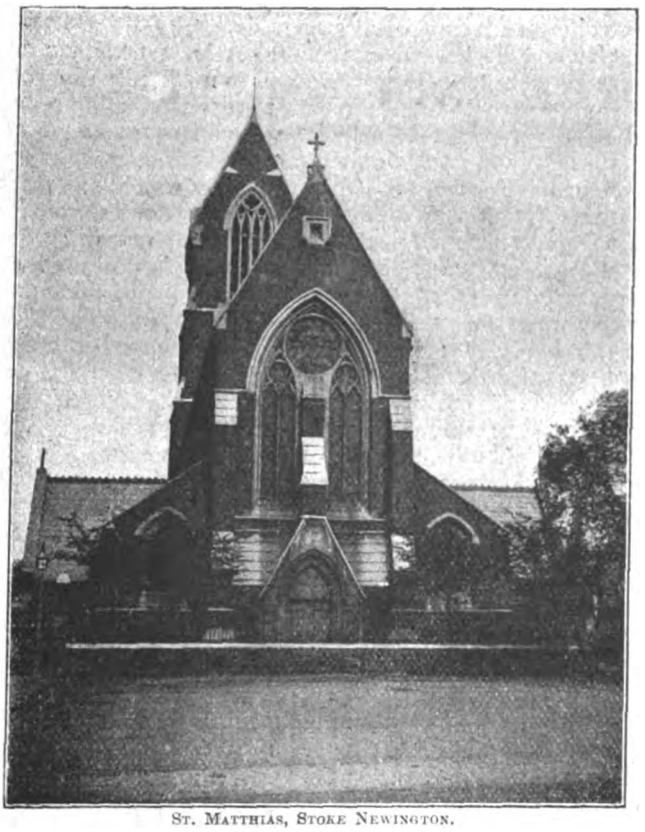
completeness as those at St. Matthias'. The site in question was Baldwin's Gardens, one of the poorest, most densely populated and depraved localities in the Metropolis —the church to be reared upon it, the since historically



ST. MATTHIAS, STOKE NEWINGTON.
W. Butterfield, Architect.

famous St. Alban's, Holborn, whose history is perhaps best, if somewhat laconically, written over the two main entrances to that noble building.

Above the door in Baldwin's Gardens we read :—

"FREE FOR
EVER TO CHRIST'S POOR
THIS CHURCH IS BUILT
AND ENDOWED IN THANKFUL
ACKNOWLEDGMENT OF HIS MERCIES
BY A HUMBLE STEWARD OF GOD'S BOUNTY
A.DNI. 1860."

While that above the Brooke Street entrance tells us that :

"TO THE
GLORY OF GOD AND
IN MEMORY OF S. ALBAN, MARTYR
UPON A SITE GIVEN BY
WILLIAM HENRY, 2nd BARON LEIGH
THIS CHURCH IS ERECTED BY
A MERCHANT OF LONDON."

The "humble steward" and "merchant of London', was the late Lord Addington, then Mr. J. G. Hubbard M.P.

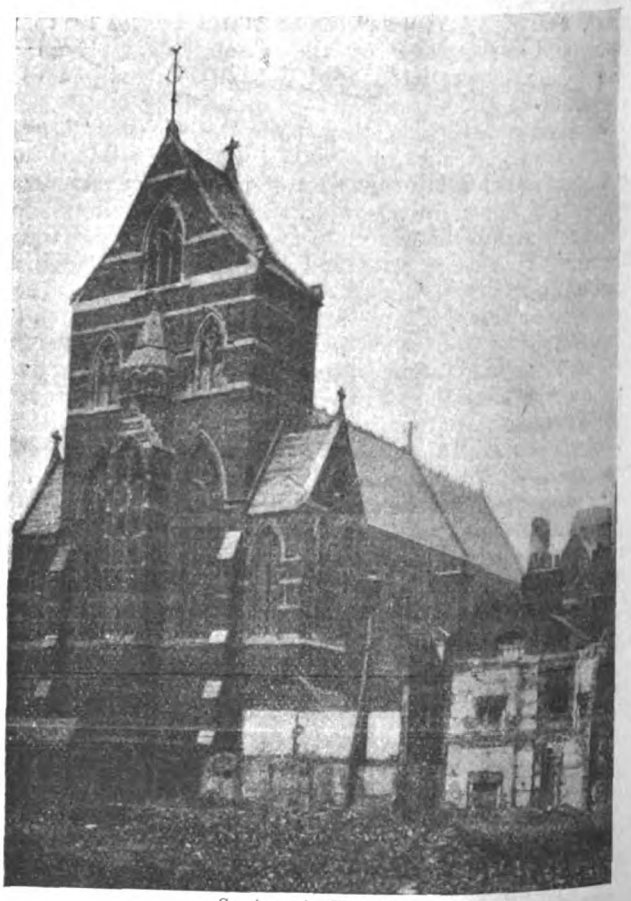
One of the good works set on foot by Rev. Bryan King in his parish of St. George's-in-the-East had been the establishment of a mission district in Calvert Street, Old Gravel Lane, over which he set a former curate of St. Barnabas', Pimlico, Rev. C. F. Lowder. To him soon came, as a volunteer, from the lovely Berkshire Vale parish of Wantage, with its grand cruciform church of SS. Peter and Paul (just then being restored by Street), Alexander Heriot Mackonochie, and the success of these two priests' labours amongst the rough and lawless population of the riverside was such, that when the founder of St. Alban s, Holborn, was in search of a capable missionary to evangelise the district assigned to that church, he offered the new incumbency to Mackonochie, by whom it was accepted.

The first religious service held in the district was on Sunday, May 11th, 1862, in a room over a costermonger's fish shop at the Leather Lane end of Baldwin's Gardens, but this place being dirty, dangerous, and infested with vermin, the services were removed a month later to a cellar forming the basement of a house occupied by a printer in Greville Street. Annoyances were experienced here. The printer's machines above rattled down dust on the heads of the worshippers beneath, the printers' boys borrowed chairs from the congregation to turn on the gas for the floor above at the meters which the cellar contained, while the gamins outside joined loudly and derisively in the Gregorian tones which issued from the windows Amid such surroundings the services were carried on with, from the first, the adjuncts of vestments and lights, a ritual whose development shortly after the consecration of the permanent church was destined to give rise to that series of litigations and persecutions which only terminated in 1882 with Mr. Mackonochie's withdrawal from the scene of his labours, in accordance with the wish expressed by Archbishop Tait on his death-bed.

St. Alban's, Holborn, and St. Augustine's, Queen's Gate, from the modest reticence which, so to speak, pervades their decoration, from a kind of via media between the dignified severity of St. Matthias', Stoke Newington, and the gorgeousness of All Saints', Margaret Street, one showing what can be done with the simplest and commonest, and the other what can be achieved with the most sumptuous materials. In all these churches Mr. Butterfield has approached the sublime in architecture. Their steeples present much variety. At St. Matthias', Stoke Newington, Mr. Butterfield had the temerity to import the saddleback type into the streets of the metropolis.

This is a kind of steeple rarely found among mediæval churches between the English Channel and the Tweed, but it is used with much picturesqueness of effect in Scotland and in certain districts of the Continent, as for instance in Normandy ; in Picardy, where it is found along the banks of the Oise in such typal early French pointed examples as Nogent les Vierges, Villers St. Paul, St. Leu d'Esserent, Cauffry, Champagne, and Auvers; in a batch of churches in Overijssel and Friesland ; and in some parts of Northern Germany, particularly between the Westphalian cities of Soëst and Paderborn ; though in all these cases the saddleback finds much more favour in village than town architecture.

The late Mr. Woodyer was, the writer believes, the first architect of the movement to revive the saddleback steeple in the village church built by him at Lydbrook (Forest of Dean), about the year 1848, but since Mr. Butterfield's adoption of it on so grandiose a scale at Stoke Newington in 1853, that architect has not only repeated it in divers



ST. ALBAN'S, HOLBORN.
W. Butterfield, Architect.

forms at Holborn, Hammersmith and Penarth, but other practitioners have favoured this most striking form of steeple, notably, Mr. Street at East Grinstead and St.

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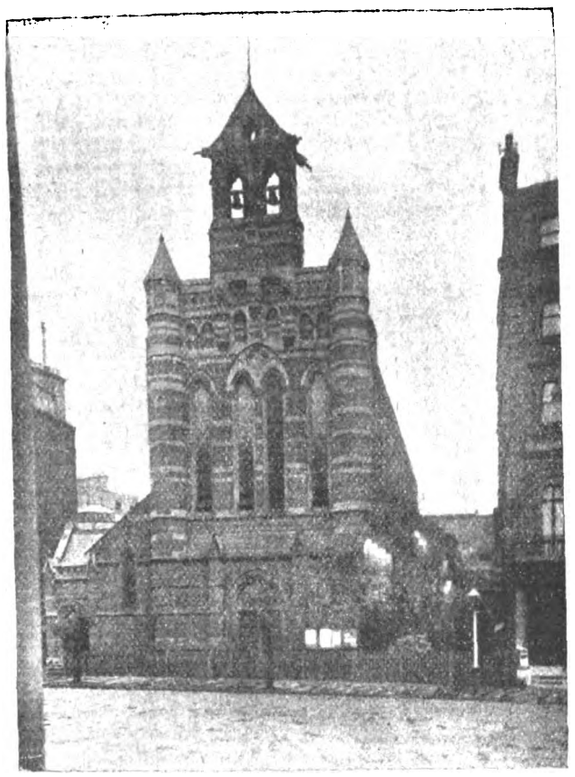
John's, Torquay; Mr. Bodley, at St. Martin's, Scarborough, and Christ Church, Pendlebury; Mr. Peacock, at St. Jude's, Gray's Inn Road; Mr. Champneys—in this instance cruciform—at St. Luke's, Kentish Town; and Messrs.



ST. AUGUSTINE, QUEEN'S GATE.
W. Butterfield, Architect.

Walker and Athron, at St. Bartholomew's, Armley, near Leeds.

When St. Matthias' was in course of erection the ground to the west of it was being covered with streets of the most prosaic description, but on the east there intervened between it and the Stoke Newington Road a very charming piece of meadow land shadowed by fine trees, and the long gardens pertaining to the old fashioned houses lining the western side of that thoroughfare from Shacklewell Lane to West Hackney Church. But, with sorrow be it spoken, both have, within the last few years, vanished entirely, for "the march of modern improvement" and "the higher education," of which we hear so much nowadays, are still progressing, and economy of time and material being the great desiderata, row upon row of streets now cover the site, run up like Aladdin's palace in one night, and affording, to speak somewhat figuratively, an illustration of how many acres of building may be covered with the same number of bricks that were used a century ago, for one of the substantial family mansions which a dozen of these packing cases set up on an end have replaced. Mr. Butterfield's foresight, therefore, in designing a church of such dignity and grandeur for this corner of Stoke Newington was a very wise one—just the right contrast that was needed being afforded by St. Matthias' to the mushroom houses of its locale.

The western composition viewed from Goldsmith Square is undoubtedly very fine, but perhaps the steeple shows best of all from one of the above mentioned new streets to the eastward where it is seen at an angle which lends increased bulk to the whole structure.

THE Town Improvement Committee of the Newcastle Corporation have approved plans submitted by Mr. M. Joseph for a new theatre to be built in Westgate Road, between the present Tyne Theatre and Blenheim Street. It will have a frontage of 69 ft., and accommodation for 2,517. There is to be a public balcony in front of the building extending 8 ft. over the footway.

NOTES ON CURRENT EVENTS.

WE would give a word of warning to those architects who may feel inclined to send £2 2s. for the conditions of a competition which is being promoted by the Manchester Corporation. It is rather an attractive competition, the premiums being £300, £200, and £100, and is for a fire station, police station, and other buildings, to cost £85,000. But we understand from one who has seen the conditions (1) That the remuneration is to be 3 per cent; (2) that the premium to be deducted from the commission; and (3) that the corporation will not undertake to place the work in the hands of the author of the first premiated design. We believe also there is no mention of the appointment of a professional assessor. The profession has been warned, times without number, in respect to competitions of this kind. But it is evidently clearly understood by the Manchester Corporation that they have to deal with a profession which has little or no professional cohesion or *esprit de corps*, and which only recognises its own professional usages and rules when it suits its convenience to do so. In this case we have no hesitation in saying that any member of the Royal Institute of British Architects, or the allied societies, who takes part in this competition distinctly violates the conditions of his membership, and ought to be dealt with accordin ly. The unprofessional terms offered are in themselves sufficient to bar any self-respecting architect from competing. Doubtless the Manchester Society of Architects will deal with the matter as far as they are able, and the Council of the Royal Institute of British Architects should also take notice of it. But this is as nothing if the profession do not solidly support the authority of the Institute, and refuse absolutely to have anything to do with the competition.

PREMIUMS of £20 and £10 are offered for the two best designs submitted in competition for an isolation hospital to be erected at Trowbridge by the Trowbridge and District Joint Isolation Hospital Committee. Conditions of the competition, together with particulars, are to be had from the clerk to the committee on payment of 10s., returnable on receipt of design. June 24th is the date fixed for sending in the designs.

IN the South Shields Municipal Buildings Competition, the result of which we announced last week, the third premium of £50 goes to Mr. Louis Ambler. There were 72 designs sent in, and we understand that the competition committee have resolved that, subject to the Town Council's approval, Mr. E. Fetch, the author of the first premiated design, be appointed architect for the work. The second premium of £100 was awarded to Mr. Rupert Savage.

THE Corporation of Darlington invite competitive designs for a row of shops, with dwelling-houses, to be erected on the new line of frontage proposed to be adopted in Parkgate. Particulars can be had from the borough surveyor.

NEXT Monday evening, April 1st, there will be a business meeting of the Royal Institute of British Architects, at which will be considered certain suggested amendments to the R.I.B.A. form of conditions of contract. The Council of the R.I.B.A., having finally withdrawn from further negotiations with the Institute of Builders, no longer bring forward the amended clauses with a view to securing a uniform form of contract agreed upon by both Institutes, but they submit them to the consideration of the general body of R.I.B.A. members, with a view to such amendments being incorporated in the Royal Institute Form of Contract as may be found desirable. Elsewhere we print these amended clauses *in extenso*.

MR. ALFRED GILBERT, R.A., has accepted a commission from a committee of subscribers to execute a portrait medallion of the late Professor Henry Sidgwick, which will be set up in Cambridge as a permanent memorial of his influence and teaching.

MR. SYDNEY COOPER, R.A., who is 98 this year, has just lately been suffering from bronchitis and gastric catarrh.

WE see it stated that Mr. E. A. Abbey, R.A., has been

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commissioned to paint a picture of the Coronation of King Edward VII., the only picture of the Coronation to be painted by Royal command.

IN consequence of the death of her Majesty Queen Victoria the annual banquet of the Royal Academy will not be held this year.

IN connection with the great Strand improvement scheme, it is complained that, whilst the churches of St. Mary-le-Strand and St. Clement Danes have been left, yet the population of the parishes is being denuded by about one-half. Of course, the demolition of houses has been and will be very great, and no doubt, when the new thoroughfare is constructed, it will be found that the two parishes will have become, to a very large extent, non-residential. This must inevitably mean that the churches will, in the future, have to depend a good deal upon casual visitors for their congregations.

THE proposal of the Streets and Buildings Committee of the York Corporation to make a new street close to the Minster is meeting with considerable opposition, according to a York correspondent. The roadway at the south side of the Minster was handed over to the Corporation some 20 years ago by the Dean and Chapter, a provision being made that this side should not be used for heavy traffic. If, however, the Corporation carry out their proposition, it will considerably increase the number of vehicles passing this point, and also entail the destruction of some very interesting examples of the architecture of bygone ages.

THE London County Council, at their meeting on Tuesday, approved an estimate of £26,285 for expenses connected with the erection of three blocks of dwellings on the Duke's Court site, Drury Lane, for the accommodation of 610 persons of the working classes to be displaced by the carrying out of the Clare-Market-Strand scheme. In answer to a question, Dr. Collins said that the rents proposed to be charged were: One room, 3s. to 3s. 6d.; two rooms, 6s. to 6s. 6d.; three rooms, 8s. to 8s. 6d.; and four rooms, 10s. to 10s. 6d. The Council duly accepted a tender for £23,600 for the erection of the buildings.

SOME years ago, when Trafford Park was up for sale, the Manchester City Council, by a dilatory policy, lost an unique opportunity of securing a fine public park—one that would have given to Manchester a splendid and much needed addition to its open spaces. Now another opportunity—and the last—offers of obtaining a really large and beautiful park for the Manchester public. Heaton Park has been in the market for some years. It lies just outside the northern boundary of the city, and covers an area of some 650 acres in extent. It is the only natural park of any serious dimensions in the neighbourhood of Manchester which has not been appropriated by the builder, and of late years its woods and rolling meadow lands have frequently been the scene of volunteer reviews and sham fights. In the centre of the park is the hall, which for generations was the seat of the Earls of Wilton. The price originally asked for the park was £250,000, but it has now been stated that the vendors are willing to sell it to the corporation for £230,000. The Parks Committee have agreed by eight votes to four to recommend the acquisition of the park by the corporation, though they consider that the question of price will have to be dealt with. The committee think it should be £300 an acre, and not £354, as now asked by the vendors. The idea of the committee in recommending the purchase of the park is that the estate should be used partly as a park, and partly for the carrying out of a housing scheme for artisans, the houses being erected on the outskirts of the park. At any rate, there can hardly be any question but that the purchase of Heaton Park is just one of those things which the Manchester City Council should not hesitate to do. It is, as it were, a last opportunity. May it not become, as in the case of Trafford Park, a lost opportunity!

SOME notes on the discovery of two urns, probably Saxon, at Lancaster, were read at last week's meeting of the British Archæological Association. They were communicated by Mr. T. Cann Hughes, F.S.A. The larger urn was in a fragmentary condition, but the smaller one was intact. They have been deposited in the museum of the Storey Institute. They are both of imperfectly dried clay of a reddish colour, and bear handmarkings.

A TOUR to the Riviera, Florence, Venice, and Italian Lakes for 18 days, leaving London 8th May, has been organised by the committee of the "Northumbria Touring Club," with Mr. Percy, solicitor, of Clifton House, Alnwick, as hon. secretary. The inclusive cost of the tour will not exceed 16 guineas. There are a few vacancies, and Mr. Percy will be pleased to give full information to any readers of the *British Architect*, or their friends, who would like to join the party if application be made immediately.

THE members of the Edinburgh Architectural Association last Saturday journeyed to Kirkcaldy, where they visited the Victoria Cabinet Works, permission for which had been kindly granted by Messrs. A. H. M'Intosh & Co. The party was under the leadership of Mr. George Ferguson, who explained the various processes and machinery. The works, which are, perhaps, the most extensive of their kind in Britain, proved to be exceedingly interesting, and the visit was most instructive and enjoyable. In the afternoon the Adam Smith and Beveridge Memorial Halls were visited, by the kind permission of Mr. W. L. Macindoe, Town Clerk, where Mr. James B. Dunn, the architect, acted as leader, and described the different parts.

Two papers on "Temporary Carpentery Work" were read at last week's meeting of the Glasgow Architectural Craftsmen's Society. In the first paper, the author, Mr. Robert Stuart, referred to the construction of crane seats and gabbert scaffolds. With regard to crane towers, he advocated that the centre tower, which contains the mast, should be 14 ft. square, instead of 10 ft. or 12 ft., to ensure there being as little overhang of the crane as possible, and the mast, he was of opinion, should be in two or three thicknesses well banded and bolted together. As to gabbert-scaffolding, care should be taken that there be sufficient space provided between the timbers and the wall, in order that, in the slight swaying which takes place, no injury be done to the stone or brickwork. Few or no nails should be used in the fixing of scaffold timbers, as they entail great difficulty and danger to the workmen in taking down, bolts being used in all cases for this purpose. In the second paper, Mr. Baxter referred to temporary stand construction. In the course of his remarks, he said he was of opinion that round timbers could be used advantageously, and with decided artistic effect, Norway poles being cheaper than three thicknesses of battens, as commonly used here, and with the bark intact, could be treated in picturesque fashion with little difficulty. Mr. Baxter also dealt minutely with various formulæ for the calculation of strengths of timber supports.

NOTES FROM BOSTON, U.S.A.

BY R. BROWN.

A RUSE TO GET IN AN EXTRA STOREY.

AFTER a protracted legal contest the full bench of the Supreme Court has just given its decision in the case of the Attorney-General *v.* Henry B. Williams, *et al* trustees of the Westminster Chambers, holding that the erection of the structure to the height of 96 ft. was contrary to the express provision of the statute limiting the height of buildings to 90 ft. The court decrees that the trustees must conform to the law. This means that the six additional feet must be removed.

It would require a long explanation to detail all the points in this case. But, in brief, it is something like this: The law says that while the main building line must finish at 90 ft. from street, certain "ornaments" standing above this line may be allowed. The owners built above the limit an ornate entablature with carved figures, in frieze, supporting the cornice. The frieze was pierced with windows, and thus an extra storey was gained. But

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alas, for the owners, this fine cornice and caratyide figures has to come down!

COSTLY INTERIORS FOR WOODEN FRAMED BUILDINGS.

As illustrative of how, in America, very costly work is placed in the interior of wooden-framed buildings, I quote the following from a daily newspaper: "One of the finest villas at Newport is approaching completion. It is of Colonial architecture, and is *constructed of wood* with a *stucco finish*. The main house is three storeys high, and there is a two-storey extension for the use of the servants. The dining-room is round, finished in white and gold with mirrors. It is 30 ft. high, and has a dome ceiling. The salon is also in white and gold, with a stuccoed ceiling."

SOCIETIES.

This month's gathering of the Boston Society of Architects was a particularly interesting one. The members were invited to meet in the afternoon at the new Colonial Theatre, and in company with the members of the Architectural Club, were conducted by Mr. Clarence H. Blackall (the architect of the theatre) over the entire building. A good idea of the construction, the heating and ventilating, and the mechanical working of the stage was gained by the visitors. Later in the evening, after the usual dinner, Mr. Blackall gave a lengthy and very graphic description of the theatre, illustrated by lantern views. Many of them were photographs taken during the progress of the building. He was followed by Mr. H. B. Pennell, who read a paper on the interior of the theatre, and the decorative painting.

The Municipal Art League of Chicago, which has recently sprung into existence, has laid out a very long program. The trouble with many of these societies is a lack of moral stamina. They set out beautifully with numerous officers and committees, and then in course of time die of sheer inanition.

SOME PICTURE EXHIBITIONS.

There have recently been held numerous "one man" picture exhibitions which we can only briefly enumerate. Mr. H. B. Warren exhibited a small collection of water colours, chiefly mountain scenery in Vermont, which received high encomiums from the press. Quite a number of pictures were sold.

Hopkinson Smith's annual exhibition showed work quite up to his standard in views of the Thames, Venice, etc.

Charles Woodbury's exhibition, all oil pictures, was very fine in the rendering of the sea in various places.

Boston is proud of its Velasquez, but the great and crowning attraction of the season is the Loan Exhibition of Fair Children being held now by the Copley Society (formerly the Art Students' Association). Pictures have been loaned from private collections in Montreal, also from England. The exhibition is open on Sundays, and attracts quite a crowd of people. On certain afternoons during the week there are teas held in the galleries. The catalogue is of a liberal size, and gives a sketch of the history of each artist, together with a number of process reproductions of some of the chief works shown.

CANADA'S COMMERCIAL PROGRESS.

The Dominion of Canada is making great progress commercially, as a reference to statistics will show. The development of the mineral wealth of that country will surely be followed by an advance in the arts which administer to the needs of the people in a higher civilization.

SOME BUILDING WORKS.

A large hotel is to be built on the site of the Brunswick, and it is said the work may begin in a few months. The present Hotel Brunswick was built in 1874, and enlarged in 1876, involving a total expenditure of nearly $1,000,000. The building was designed by Messrs. Peabody and Stearns.

Miss Josephine W. Chapman is the architect for the New England State Building. The style is at the Pan American Exposition at Buffalo, "Old Colonial."

Mr. Cram has submitted plans for a Church at Winchester, which it is proposed to build of stone.

Two new schoolhouses are to be built in Brookline, one of these is from plans by Messrs. Peabody and Stearns, and the other by Mr. F. Joseph Untersee.

It is understood that another clubhouse is to be built by a Harvard undergraduate club, known as "The Owl."

A QUESTION OF STYLE.

The First Parish Society of Cambridge, unable to agree as to the style of architecture for their proposed new church, have decided to remodel the old structure instead of erecting a new building. Some of the members wished the new church to be "Gothic" in style, and about the same number "Colonial." For almost two years the parish has been struggling with the problem of "Gothic" versus "Colonial." In the competitive designs sent in, Messrs. Cram, Goodhue and Ferguson championed the former style in the Perpendicular style of Gothic.

ENGINEERING AND SANITARY NOTES.

By CHAS. E. GRITTON, A.M.I.C.E.

SANITARY BURIAL.

I ONCE had to have a deep trench excavated outside a burial ground, and the results to sight and smell were that had I not then been convinced that cremation was the only sanitary and decent form of burial, I should never afterwards have doubted it. Dr. Klein has been engaged in some gruesome experiments, burying animals killed by certain known diseases, and after varying periods, digging them up and searching for bacteria. The bacillus of Asiatic cholera was living after 19 days, but no living specimen could be found after 28 days' burial. Similar results were found with the typhoid fever bacillus. The bubonic plague germ was never found alive after three weeks, although surviving more than two weeks' burial. He found that the bacillus of consumption retains vitality for but a short time after the death of its victim.

A MODEL INSTITUTION.

Thanks to the courtesy of the local authorities, I last week went over the additions to the St. George's Union, now approaching completion. They reflect credit alike upon the well-known architect, the truly capable clerk of works, who conducted us and the contractors. Hellyer's Corbel W.c.'s strike one as perfection in such a building, and the busy laundry, filled with wonderful machines by Summerscales and others, is a place to linger in. In the infirmary, corners are non-existent, their usual place being filled by cleanly curves. The story of Rowland Hill's chapel, where there were no confessional boxes or other corners for the Devil, was vividly brought to my mind.

COINCIDENCES ON THE CAM.

I am very proud of the fact that Cambridge has won the boatrace every year since *I* drained Trinity College and Trinity Hall. Some of my friends say I am wanting in humility, but what would friends be worth if they were never candid? It is at least a curious coincidence, as these two colleges provide the greater number of the Cambridge crew.

NOVEL SOURCE OF PROPOSED WATER SUPPLY.

Under the town of Wirksworth, in Derbyshire, is a large lake formed in some disused mine workings. Its daily output into the river Derwent is from fifteen to eighteen million gallons. The Ilkeston and Heanor Water Board are promoting a Bill in Parliament to obtain powers to draw their water supply from this lake.

AGAIN NOT BRITISH

An engine that is expected to work almost a revolution in motive-power supplying machines has been introduced into England. The patent rights for Great Britain have been purchased by the Diesel Engine Company, Limited, and the first engine made in the country was yesterday inspected by a number of experts at the works of Messrs. Scott & Hodgson, Limited, Guide Bridge, near Manchester. The object of the inventor, Mr. Rudolph Diesel, of Munich, has been to find a substitute for existing types of steam, oil, and gas engines. He claims to have achieved this at a much lower cost of manufacture, at a

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low cost of working, and with superior efficiency under all conditions. The motive power of the engine is a small quantity of crude petroleum, or of any practical inflammable oil or gas introduced into an excess of compressed air. The heat of the compressed air causes slow combustion, avoiding explosion, as is the case sometimes with gas engines without any material increase of temperature.

KIEL HARBOUR.

The Kiel authorities have decided on the construction of a commercial harbour in Wiker Bay, and voted 1,100,000 marks for that purpose.

BRISTOL CHANNEL DOCK SCHEMES.

For some years now the Bristol Channel has been making great strides in the construction of its docks, and at the present time great activity exists at all the seaports of the Bristol Channel. Capitalists are sinking huge sums of money in the extension and building of docks. The following is a summary given by a *Standard* correspondent of the proposed expenditure on five Bristol Channel ports :—

Bristol (proposed extensions)	...	£1,800,000
Cardiff (under construction)	...	1,500,000
Swansea (proposed extensions)	...	1,750,000
Newport (proposed extensions)	...	750,000
Llanelly (under construction)	...	200,000
		£6,000,000

EXTENSION OF WOOLWICH ARSENAL.

In consequence of the large demands on the Woolwich Arsenal for munitions of war, additional buildings for the manufacture of guns and quick-firing ammunition, and for the extension of the Lyddite factory and the South Boring Mills are being erected at a cost of £35,000. It is proposed to abolish steam at the South Boring Mills and to drive the many powerful machines in use there by electric mechanical power.

RAISING THE MAINE.

This task is to be undertaken by a company, says *Science Siftings*, who charge nothing, but give 3 per cent. of the profits to the U.S. Government, besides returning all personal property to the officers and crew. The chief difficulty arises from the Havanna Harbour mud. In three years the vessel is buried in 40 feet of mud. The cofferdam will be the largest ever constructed. The holds contain £100,000 worth of ammunition, and 100 tons of copper and brass. A sufficient quantity of old bronze is to be set aside to form the statues for the projected Maine memorial. The lucid description with sketches explain the proposed operations fully.

TELFORD ROADS.

In the special paving number of the *Public Health Engineer* last week, Professor P. F. Nursey is responsible for an interesting paper under the above heading.

PRESERVATION OF STEEL STRUCTURES.

Before the Belfast Mechanical and Engineering Association, last Tuesday, Mr. Walter Chambers read a paper on the above. I hope to quote from it shortly, as it is up to date. Carbonizing coating as a protective medium was discussed, and is now being used on Irish railways.

OUR ILLUSTRATIONS.

CARDIFF BOROUGH ASYLUM COMPETITION.

PREMIATED DESIGN BY WILLS AND ANDERSON.

THE authors of the design we illustrate to-day were amongst the five firms of architects selected to take part in the final stage of this important competition, the result of which was that the premium of £500 was awarded to Messrs. Oatley & Skinner, whilst each of the other four firms (Messrs. Greenway & Newbury, Law & Allen, Hooley & Sanders, and Wills & Anderson) received an honorarium of £100 apiece. Messrs. Wills & Anderson's excellent design may almost be said to constitute almost the last word on asylum planning, and indicates much skill and thought.

The buildings are so arranged that both in the 300 and the 1,250 scheme all patients are housed in buildings planned for the special section to which they belong, the extensions being provided for in two villas and the extreme end chronic block, and the block at extreme right and left of southern front for sick and the infirm and recent and acute cases. The blocks for recent and acute cases are divided into four day-rooms and four dormitories in the first scheme, and 6 day-rooms and dormitories in the alternate scheme, thus enabling the different sections of patients to be divided and classified.

The buildings, while complying with all the official regulations, are more compact than in any other of the premiated designs, and the corridors of communication are shorter and more direct. The visitors' rooms are so placed that they also serve as corridors of communication. The internal courts are kept large in order that full cross ventilation for the ward blocks may be given.

BUILDING BY-LAWS IN RURAL DISTRICTS.

A DEPUTATION appointed by the Council of the Royal Institute of British Architects waited on Mr. Grant Lawson, Parliamentary Secretary to the Local Government Board, on the 12th inst., to lay before him the views of the Institute on the question of administration of building by-laws in rural districts, which had already been expressed to the Local Government Board in October, 1899, when Mr. T. W. Russell received the representatives of the Institute.* The deputation consisted of the following gentlemen :—Mr. W. M. Fawcett (Past Vice-President), Professor T. Roger Smith, Mr. Lacy W. Ridge, Mr. H. D. Searles-Wood, Mr. E. Guy Dawber, and Mr. W. J. Locke, Secretary.

The points submitted to Mr. Grant Lawson had been summarised as follows :—1. That there has been of late a great increase of interference by public bodies and their officials with buildings in country places. 2. That this has arisen from the Local Government Board having permitted, and in fact encouraged, "rural authorities" to take to themselves "urban powers." 3. That such an assumption of powers by a local authority is an unnecessary and vexatious infringement of the liberty of the individual subject. 4. That it is undesirable, except perhaps in public buildings, that local authorities should relieve private persons from their responsibility for the soundness and sufficiency of their building construction. 5. That there is no desire on the part of the Royal Institute of British Architects to limit the application of such by-laws as are strictly sanitary in their object. 6. That there is no objection to by-laws as to the width of streets being generally applicable, as they would remain inoperative while a district remained rural. 7. That a complete and efficient by-law as to party-walls would sufficiently protect each individual from the danger of fire from his neighbour's premises in country places, in uncrowded districts. and wherever streets are laid out with the width and spaces required by the by-laws. 8. That in such places the minute requirements of the by-laws against fire, founded as they are on the legislation originally passed for overcrowded London after the Great Fire, are unnecessary and vexatious. They are frequently rendered grotesque by the erection of large structures in wood under the form of balconies and verandahs. 9. That the local authorities are practically dependent on the Local Government Board for assistance and direction in framing by-laws. 10. That the scheme of the R.I.B.A. is that the Local Government Board should arrange their Model By-laws in divisions, and sanction in each district only such as are really needed therein, and so protect the public from vexatious interference in building. 11. That this is a matter to be met wholly by administration within the Board, and does not require legislation.

The R.I.B.A. Suggestions for Legislation were:—1. That the system for dealing with party-walls by the appointment of three surveyors as re-enacted in the London Building Act, 1894, has proved successful during a long period. That it is desirable that it should be extended to the growing suburbs around the districts of the London

* The report of the committee was summarised at length in the *British Architect* of June 9, 1899.

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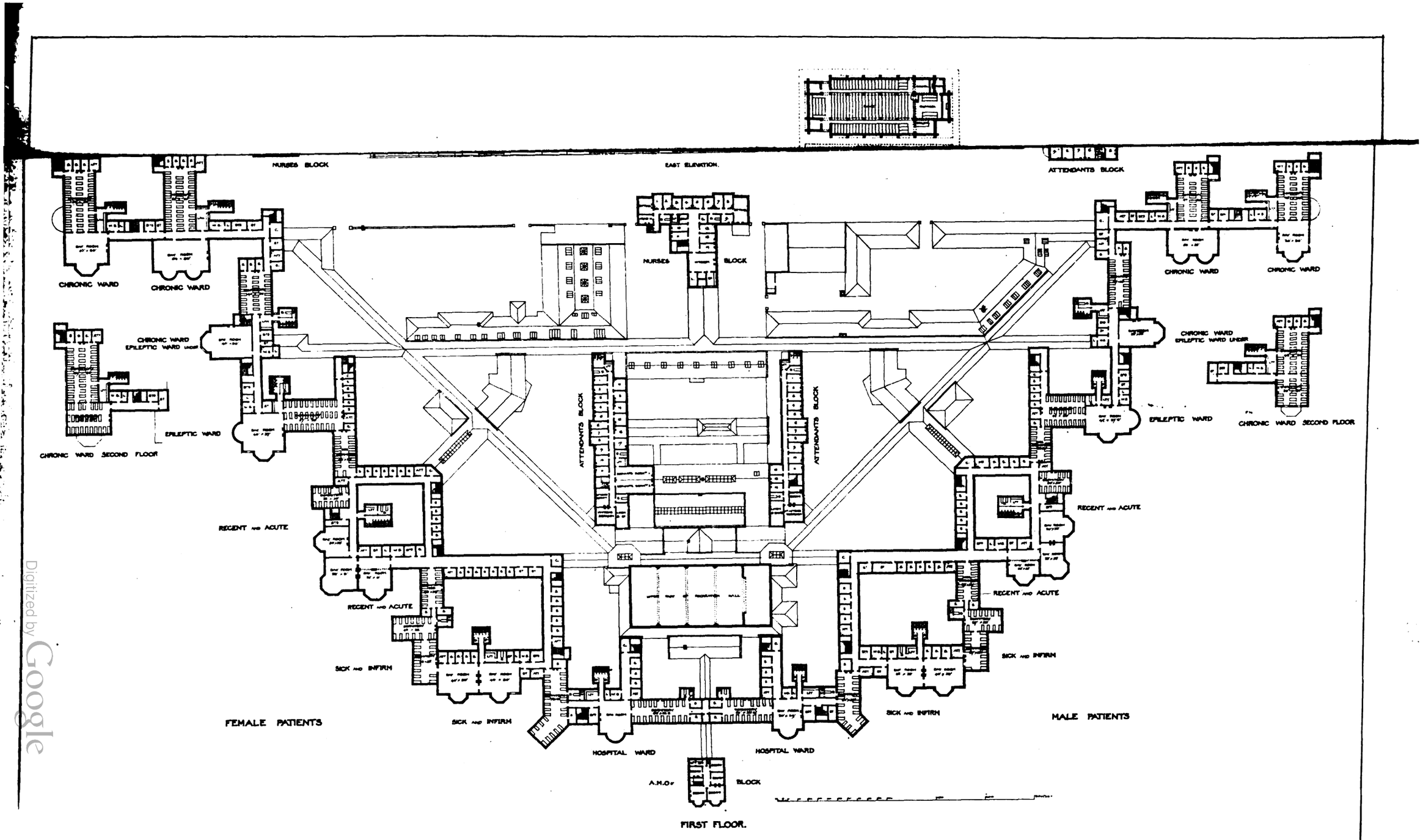

PROPOSED ASYLUM WHITCHURCH.

DESIGN BY WILLS & ANDERSON SWANSEA.

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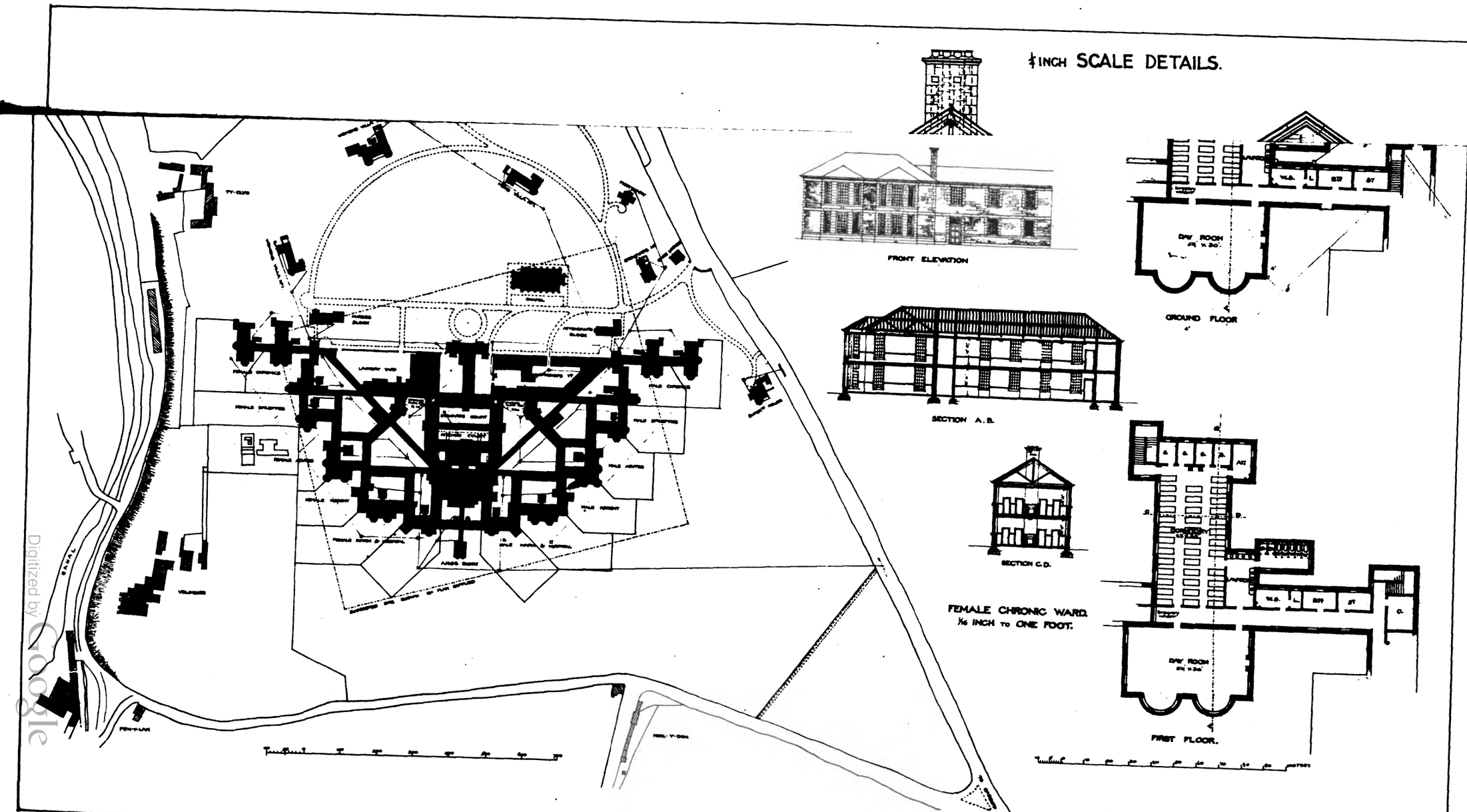

¼INCH SCALE DETAILS.

FRONT ELEVATION

SECTION A.B.

SECTION C.D.

FEMALE CHRONIC WARD.
⅛ INCH TO ONE FOOT.

PROPOSED ASYLUM. WHITCHURCH.

DESIGN BY WILLS & ANDERSON. SWANSEA.

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County Council, to such towns as are without special legislation on the subject, and to England and Wales generally. 2. That it would be desirable to establish a tribunal of appeal in connection with the Local Government Board for settling differences which arise as to the meaning of by-laws and building regulations. That to be of value the tribunal must act with speed and have technical knowledge.

Mr. Grant Lawson, replying to arguments in support of the above points, said that both the President of the Local Government Board and himself were agreed that evils did exist in the present system of administration of building by-laws, and that there should be a difference in the codification of by-laws for rural and for urban districts. The proposals of the Royal Institute had received careful consideration, and since the appointment of Mr. Walter Long and himself efforts had been made as far as possible to adopt them. Mr. Lawson first desired to point out that it was not the function of the Local Government Board to take the initiative in the question of district by-laws; the Board only approved by-laws submitted to them by local authorities. It was not in the power of the Board to compel a local authority to adopt any particular set of by-laws. As regards encouraging local bodies to take "urban powers," the Board only did so in cases where very insanitary conditions rendered such a course desirable. With regard to meeting the views of the Institute the Board had drawn up a set of proposed Model By-laws for Rural District Councils, on which he invited the opinion of the Institute.

These by-laws, Mr. Grant Lawson said, were scheduled as follows:—(*a*) Interpretation of terms; (*b*) Exempted buildings; (*c*) Structure of walls and foundations of new buildings for purposes of health. With respect to the sufficiency of the space about buildings to secure a free circulation of air, and with respect to the ventilation of buildings; (*d*) With respect to the drainage of buildings; (*e*) With respect to water-closets in connection with buildings, and with respect to the keeping of water-closets supplied with sufficient water for flushing; (*f*) With respect to earth-closets and privies in connection with buildings; (*g*) With respect to ashpits in connection with buildings; (*h*) With respect to cesspools in connection with buildings; (*i*) With respect to the closing of buildings or parts of buildings unfit for human habitation and to the prohibition of their use for such habitation; (*j*) As to the giving of notice; as to the deposit of plans and sections by persons intending to construct buildings; and as to inspection by the Council; (*k*) Penalties: (*l*) As to the power of the Council to remove, alter, or pull down any work begun or done in contravention of the by-laws; (*m*) Repeal of by-laws.

Mr. Grant Lawson pointed out that these proposed by-laws were mainly sanitary in their application, and that regulations as to materials and structural details were omitted. With regard to the request of the Institute for an extension by legislative means of the party-wall system in London to all districts in England and Wales where no special legislation existed, Mr. Lawson said that he could not promise any action this summer, but he would add the subject to the list of Bills which the Local Government Board hoped to introduce at some period during the continuance of the present Government.

The deputation having thanked Mr. Lawson for the corteous action of the Local Government Board in submitting the draft Model By-laws for the consideration of the Institute, and also for the sympathetic manner in which he had received them, then withdrew.

The questions are now before the original committee of 1899, who are preparing a report to the Council.

SUGGESTED AMENDMENTS TO THE R.I.B.A. FORM OF BUILDING CONTRACT.

WE give below the suggested amendments to the R.I.B.A. Form of Building Contract, which are to be considered at the business meeting of the Institute, to be held on Monday evening next. The proposed additions to the various clauses, or new matter, are enclosed in brackets.

1. The works shall be carried out in accordance with the directions, and to the reasonable satisfaction of the architect, in accordance with the said drawings and specifications, and in accordance with such further drawings, details, and instructions in explanation of the same as may from time to time be given by the architect. (If the work shown on any such further drawings or details, or necessary to comply with any such instructions, directions, or explanations, be, in the opinion of the contractor, in excess of that comprised in the contract, he shall, before proceeding with such work, give notice in writing to this effect to the architect. In the event of the architect and contractor failing to agree as to whether or not there is any excess, and of the architect deciding that the contractor is to carry out the said work, the contractor shall accordingly do so, and the question whether or not there is any excess, and if so the amount thereof, shall, failing agreement, be settled by the arbitrator as provided in Clause 32, and the contractor shall be paid accordingly.) The contract drawings and specification shall remain in the custody of the architect, and shall be produced by him at his office as and when required by the employer or by the contractor.

12. (The contractor shall, when authorised by the architect, or as provided by Clause 5, vary by way of extra or omission from the drawings or specification; such authorisation is to be sufficiently proved by any writing or drawing given by the architect, or by any subsequent written approval by him.) No claim for an extra shall be allowed unless it shall have been executed under the provisions of Clause 5, or by the authority of the architect as herein mentioned. Any such extra is hereinafter referred to as an authorised extra.

17. Any defects, shrinkage, or other faults which may appear within months from the completion of the works, arising in the opinion of the architect from materials or workmanship not in accordance with the drawings and specification or the instructions of the architect, or any damage to pointing by frost appearing within the like period, shall upon the directions in writing of the architect, and within such reasonable time as shall be specified therein, be amended and made good by the contractor at his own cost, unless the architect shall decide that he ought to be paid for the same; and in case of default the employer may employ and pay other persons to amend and make good such defects, shrinkage, or other faults or damage, and all expenses consequent thereon or incidental thereto shall be borne by the contractor and shall be recoverable from him by the employer, or may be deducted by him from any moneys due or that may become due to the contractor. Should any defective work have been done or material supplied by any sub-contractor ("or other person" omitted) employed on the works who has been nominated or approved by the architect, the contractor shall be liable to make good in the same manner as if such work or material had been done or supplied by the contractor, and been subject to the provisions of this and the preceding clause.

20. (All specialists, merchants, tradesmen, or others executing any work, or supplying any goods for which prime cost prices or provisional sums are included in the specification, who may at any time be nominated, selected, or approved by the architect, are hereby declared to be sub-contractors employed by the contractor; but no such sub-contractor shall be employed upon the works against whom the contractor shall make what the architect considers reasonable objection, or who will not enter into a contract with the contractor upon terms and conditions consistent with those in this contract, and securing the due performance and maintenance of the work supplied or executed by such sub-contractor, and indemnifying the contractor against any claims arising out of the misuse, by the sub-contractor or his workmen, of any scaffold erected or plant employed by the contractor, or that may be made against the contractor in consequence of any act, omission, or default of the sub-contractor, his servants or agents, and against any liability under the Workmen's Compensation Act, 1897, or any amendment thereof.)

21. The contractor shall be responsible for all structural and decorative damage to property, and for injury caused by the works or workmen to persons, animals, or things, and shall hold the employer harmless in respect thereof (and also in respect of any claim made under the Workmen's Compensation Act, 1897, or any amendment thereof, by any person in the employ of the contractor). He sha also be responsible for all injuries caused to the buildings, the subject of this contract, by frost or other inclemency

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of weather, and shall reinstate all damage caused by the same, and thoroughly complete the whole of the works.

28. The provisional sums mentioned in the specification for materials to be supplied or for work to be performed by special artists or tradesmen, or for other works or fittings to the building, shall be paid and expended at such times and in such amounts and to and in favour of such persons as the architect shall direct, and sums so expended shall be payable by the contractor without discount or deduction, or (without prejudice to any rights of the contractor existing under the contract referred to in Clause No. 20) by the employer to the said artists or tradesmen. The value of works which are executed by the contractor in respect of provisional sums, or in additional works, shall be ascertained as provided by Clause 13. At the settlement of the accounts the amount paid by the contractor to the said artists or tradesmen, and the said value of such works executed by the contractor, shall be set against all such provisional sums or any sum provided for additional works, and the balance (after allowing *pro rata* for the contractor's profits at the rates contained in the contractor's original estimate, shall be added to or deducted from the contract sum, provided that in estimating the amounts paid as last herein provided no deductions shall be made by or on behalf of the employer in respect of any damages paid by the sub-contractor to the contractor, the intention being that the contractor and not the employer shall have the benefit of any such damages).

29. The contractor shall permit the execution of work by any other artists or tradesmen who may be engaged by the employer. (The stipulation as to provision of scaffolding and plant for such artists or tradesmen is omitted.)

32. This—the arbitration clause—is practically a new one. Provided always that in case any dispute or difference shall arise between the employer or the architect on his behalf and the contractor, either during the progress of the works or after the determination, abandonment, or breach of the contract, as to the construction of the contract, or as to any matter or thing arising thereunder (except as to the matters left to the sole discretion of the architect under Clauses 4, 9, and 19, and the exercise by him under Clause 18 of the right to have any work opened up), or as to any objection by the contractor to any certificate, finding, decision, requisition, or opinion of the architect, or to the withholding or failure by the architect to give the same, then either party shall forthwith give to the other notice of such dispute or difference, and such dispute or difference shall be and is hereby referred to the arbitration and final decision of

or, in the event of his death or unwillingness or inability to act, of

. . . . . or, in the event of his death or unwillingness or inability to act, of a person to be appointed on the request of either party by the President for the time being of the Royal Institute of British Architects, and the award of such arbitrator shall be final and binding on the parties. The arbitrator shall have power to determine all such matters in dispute except as aforesaid which shall be submitted to him, and of which notice shall have been given as aforesaid. The works shall not be stopped pending such reference excepting by the direction in writing or award of the arbitrator. If either party desires to have such dispute or difference determined forthwith, he shall give written notice to that effect to the other party, and the arbitrator shall, with the assent in writing of the other party, proceed with the arbitration. In the event of the other party failing within days of such notice to give to the other his assent in writing to the immediate determination of such dispute or difference, the arbitrator shall, after written notice to the non-assenting party of a time and place of hearing, decide whether such dispute or difference shall be immediately determined or whether such determination shall await the completion, or alleged completion, of the works, and the same shall be determined at such time or times as the arbitrator shall decide. If in any such reference the arbitrator shall be of opinion that either party has been unreasonable or vexatious or dilatory either in invoking or in insisting upon reference or in the mode of its conduct, or that injury from delay or otherwise has been occasioned thereby to the other, he may by his award indemnify the latter in respect of such injury. Upon every or any such reference the costs of and incidental to the reference and award respectively shall be in the discretion of the arbitrator, who may determine the amount thereof, or direct the same to be taxed as between solicitor and client, or as between party and party, and shall direct by whom and to whom and in what manner the same shall be borne and paid. This submission shall be deemed to be a submission to arbitration within the meaning of the Arbitration Act 1889.

DILAPIDATIONS.*

By W. J. JENNINGS, F.S.I.

DILAPIDATION is variously defined. One of the best definitions from the architect's point of view is that given in the report of the Committee appointed by the Institute, previously alluded to; there it is stated that "dilapidations are in usual practice considered to be those defects only which have arisen from neglect or misuse, and not to extend to such as only indicate age, so long as the efficiency of the part still remains; but if the effects of use or age have proceeded so far as to destroy the part, or its efficiency in the structure, this argues neglect or misuse, it being the presumption that at the commencement of the term the tenant was satisfied that every part was sufficiently strong to last to its close." Dilapidations arise from waste, either voluntary, permissive, or malicious, the term "waste" being thus defined by "Grady," viz.:—"Whenever there is a particular estate in lands or tenements which must, after the determination of such estate, devolve upon another, any defect in their condition is properly Dilapidation, and the act of permitting or committing such defect is called waste."

It is necessary to consider "waste" in some detail, and to refer to the principal divisions which are, as stated above, voluntary, permissive, equitable, or malicious. There is also ameliorating waste, as to which the architect is not often troubled. Of these the first two divisions, *i.e.*, voluntary and permissive waste, are of great practical importance to the architect, being the kinds most prolific in disputes. A few words will make the meaning of each kind clear. Voluntary waste is actual or commissive, as by felling timber, pulling down buildings or altering their structure, removing wainscotting or other things once fixed to the freehold, opening mines or pits, whatever does a lasting damage to the freehold or inheritance, the kind of damage that is sometimes provided against by express stipulation in the lease, such, for instance, as not to convert a house into a shop. Permissive waste is a matter of negligence and omission only, as by allowing a building to fall or rot for want of necessary reparations, the kind of damage, in fact, which, under a lease, is invariably provided against by express agreement to repair. Equitable or malicious waste consists in acts of gross damage, usually the cutting down of ornamental timber by a tenant without impeachment of waste. Ameliorating waste is such voluntary waste as improves the demised premises, such, for instance, as where the tenant puts a new front to his house. In respect to such waste it seems that unless substantial damages be proved the tenant will not be interfered with by injunction.

Having considered the meaning of the terms, "Dilapidation" and "Waste," it is proposed to consider the obligation of landlord and tenant under two heads, viz:—(1) The obligations imposed by the Implied Covenants under the Common Law. (2) The obligations imposed by the Repairing Covenants in the lease.

First, then, with regard to the implied legal liability to repair under the common law. Generally speaking the lessor is under no liability whatever to do repairs, the general principle governing the case is that landlords are not liable to tenants in any way, the burden of repairs has always by the spirit of the common law been thrown upon the tenant, for by letting an unfurnished house the lessor does not thereby imply that it is reasonably fit for occupation or that the house will last out the term or that it will receive proper support, nor is the landlord bound to rebuild in case of fire, though the rent would still be payable. Where, however, the premises become subject to a structural defect, such as the drains, which may give rise

* From a paper read before the Society of Architects, March 21st, 1901.

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to a nuisance or be dangerous or injurious to health; the tenant may, if the steps directed by the Public Health Act be taken, throw the liability for this repair or removal in the absence of any agreement relating to the matter upon the landlord. There is an exception to the rule that the lessor is under no liability to a tenant in the case of small tenements, for under the provisions of the Housing of the Working Classes Act (53 and 54 Vic., c. 70) a warranty that the tenement is reasonably fit for habitation is implied in the case of tenements let to members of the working classes at rents varying according to the locality, thus in London the rent must not exceed £20, in Liverpool £13, in Manchester and Birmingham £10, elsewhere in England £8, in Scotland and Ireland £4, but the landlord may contract out of his liability under this Act, and in practice it is found that he generally does so.

It often happens that during a tenancy the drains prove defective, causing possibly illness, expense, and death, but if the landlord has given no undertaking in the form of a guarantee that the sanitary arrangements are satisfactory, he cannot be called on by the lessee except as stated above to put right what is wrong, nor to recompense the tenant for the expense and loss he has been at. Of course, if a representation has been made that the drains are satisfactory, although the undertaking is not in writing, it may be a different matter, and the landlord might be liable, and as, generally speaking, tenants ask about the sanitary arrangements, care should be taken in replying, or it may be found that a guarantee can be construed. If the premises are let furnished it is an entirely different matter, for in that case there is an implied covenant on the part of the lessor that the house is in a fit condition for immediate occupation.

One of the leading cases on the implied covenant that a furnished house is fit for immediate occupation is that of *Wilson and Another* v. *Finch-Hatton*, Exchequer Div. 2, 1876-7. In this case the defendant agreed to rent the plaintiff's house for three months from the 7th May, but having at the beginning of the tenancy discovered that the house was, owing to defective drainage, unfit for habitation, refused to occupy. The plaintiffs immediately set about repairing the drains, and on the 26th May tendered the house in a wholesome condition to the defendant, who refused to occupy or to pay rent. The plaintiffs thereupon sued for the rent. It was held that the state of the house at the beginning of the intended tenancy entitled the defendant to rescind the contract and that he was not liable for rent or for use and occupation. The decision in this case is founded on the well-known case of *Smith* v. *Marrable*, generally alluded to as the famous "bug" case, which was decided as long as 1843, and which decided that it is an implied condition in the letting of a furnished house that it shall be reasonably fit for habitation, and that if it is not fit the tenant may quit without notice, and he would be justified in repudiating the tenancy, and, if he has incurred loss, be entitled to recover damages.

With regard to the implied liability of the tenant under the common law, his responsibility is much greater than that of the landlord. There is the implied covenant to use the premises in a tenant-like manner. In dealing with houses or buildings this obligation resolves itself into one to do repairs of a certain kind, the amount or character of which in the case of leases for years has apparently never been defined with precision, the reason probably being that such instruments almost invariably contain an express covenant which displaces the implied one by the tenant to the same effect.

It will seem, however, from the authorities, that a tenant at will or a yearly tenant is bound to keep the premises wind and watertight, but as to this expression there seems to be considerable doubt in the minds of lawyers what it really amounts to. Woodfall considers that on the whole it is understood that the expression ought to be construed strictly in favour of the tenant, and quotes as an example that the broken glass of windows need not be replaced by new glass, but that the exclusion of wet by boards or other unsightly modes would be sufficient.

In the case of a tenant for years he is liable under the implied covenants for permissive waste, but not for damage by accidental fire.

A tenant for life is, in the absence of covenants to the contrary, under no implied liability to repair.

We now pass to the consideration of the second head of the subject, viz., the obligation imposed by covenant.

The distinction as between the common law obligation to repair, and the liability as expressed by covenant, is thus expressed in Gibbin's work, viz.:—"The obligation imposed by the covenant to repair differs from the common law obligation against permissive waste in this. The common law obligation is merely to guard the fabric of the building from decay, and is not infringed by an external dilapidation unless the fabric in injured in consequence. By the covenant the tenant is unconditionally bound to repair all dilapidations, whether the fabric of the building is injured or not, injuries to the building caused by inevitable accident are excepted from the common law obligation, but not from the obligation of a general covenant."

In the practice of valuing dilapidations under a repairing covenant the architect has to interpret the words of the covenant, and then survey the property and prepare the schedule and claim, and it will be convenient to consider the subject under these two branches.

For the proper interpretation of the repairing covenants the architect must have some acquaintance with the law upon the subject as laid down in some of the leading decided cases, for it is obvious that without such knowledge it would be impossible to properly advise upon the complicated and difficult cases that occur in practice. It may be urged that it is the duty of the lawyer to define the exact meaning of the words in the lease, and though doubtless this is true, yet in practically every case it is found that the lawyer cannot interpret the words of the repairing covenant without the assistance of the architect, unless he is possessed of more technical knowledge than one can reasonably expect a lawyer to possess.

Speaking broadly, the repairing covenant in the lease generally consists of two divisions—(*a*) An undertaking in general terms, (*b*) An undertaking to do certain acts of reparation, such as painting and papering, at specific periods. With regard to the general undertaking it varies very much. In the more common forms it consists of an undertaking either to "keep and leave the premises in good tenantable repair," or to "keep and leave the premises in substantial repair."

There are, of course, innumerable other forms with ill-defined shades of difference, and, of course, reservations may be inserted to protect the lessee, such as "regard being had to the present condition" and "fair wear and tear excepted": but with these special conditions it is not proposed to deal further than to say that in the former case a most careful note of the state and condition of the premises at the commencement of the tenancy should be made and agreed upon by both lessor and lessee; and with regard to the words "fair wear and tear excepted," if these words are allowed, it renders the liability of a tenant, who has been careful to use the premises as a careful tenant should, for the purpose for which they were let, comparatively slight.

In considering repairing covenants for a proposed lease, the first point to be mentioned is the desirability—in fact, the necessity, if the tenant is to be properly protected, of making a survey of the premises; for, as previously pointed out, the presumption is that at the commencement of his term the tenant was satisfied that every part was sufficiently strong to last to its close. But how often is it that an architect is instructed to survey before the lease is signed? It is probable that not in one lease in a hundred is an architect retained on behalf of a lessee. It is not until the latter has had a notice served, calling upon him to make good certain dilapidations, or claiming damages in lieu thereof, that he consults his architect. It should be pointed out to a tenant that a preliminary survey is absolutely necessary, when it is remembered that where the lessee covenants to "*keep* and leave the premises in repair" he is bound to *put* them in repair, if at the commencement of the term they require it. Payne *v.* Haine, 16 M. & W. 541, decided this point. This view cannot be generally known by tenants, for one is constantly met with the remark by the lessee when advising, after he has been served with a notice, that "the premises are in a better state than when the lease was entered into." It should also be remembered that the measure of damages for want of repairs during the existence of the lease is not necessarily the amount which it will cost to execute the

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work; for not only is the tenant bound to carry out the repairs necessary, but is liable in damages if it can be proved that the value of the reversion is lessened. There is a good deal of misconception as to this, but there is no doubt that the architect is justified in preparing the schedule and claim on behalf of the landlord, to include, in addition to the repairs, the damage that he estimates the reversion has suffered in consequence of failure to carry out repairs at the right moment. The law holds that the legal measure of damage is not necessarily the amount that would be required to put the premises into repair, but the amount to which the reversion is depreciated in marketable value, an amount which, under different conditions, varies immensely, from merely nominal damages in the case of a lease having many years to run, increasing more and more the shorter the residue of the term happens to be. To give an instance: suppose when making the survey it is found that a lead gutter has been leaking, it may be for some considerable time, it might and probably would not be a proper measure of the damage to take simply for soldering up the crack, or the renewal of the gutter, since the leakage that has been going on for some time has damaged the gutter-board, bearers and plate, not so much so as to cause actual decay noticeable at the moment of the survey, but to have started the woodwork rotting; in addition, therefore, to making good the lead gutter, the lessor is entitled to be paid something for the depreciation in value of the structure, admittedly a very difficult matter to ascertain, but which the lessor, when the amount is ascertained, is clearly entitled to. The rule for this is laid down in the case of Williams *v.* Williams, L. R. 9, C. P. 659.

(*To be continued.*)

AN INTERNATIONAL ENGINEERING CONGRESS AT GLASGOW.

AN International Engineering Congress is to be held at Glasgow on the 3rd, 4th, 5th, and 6th of September next. The Hon. President is Lord Kelvin, and the President Mr. Jas. Mansergh, President of the Institution of Civil Engineers. The following are the sections and the chairmen now invited:—Section I. (Railways): Chairman, Sir Benjamin Baker, K.C.M.G., F.R.S.; Section II. (Waterways and Maritime Works): Chairman, Sir John Wolfe Barry, K.C.B., F.R.S.; Section III. (Mechanical): Chairman, William H. Maw, President of the Institution of Mechanical Engineers; Section IV. (Naval Architecture and Marine Engineering): Chairman, the Right Honourable the Earl of Glasgow, G.C.M.G., President of the Institution of Naval Architects; Section V. (Iron and Steel): Chairman, William Whitwell, President of the Iron and Steel Institute; Section VI. (Mining): Chairman, James S. Dixon, President of the Mining Institute of Scotland; Section VII. (Municipal): Chairman, Charles H. Lowe, President of the Incorporated Association of Municipal and County Engineers; Section VIII. (Gas): Chairman, George Livesey; Section IX. (Electrical): Chairman, the President of the Institution of Electrical Engineers.

TRADE NOTES.

MESSRS. COUSLAND & MACKAY, ventilating engineers, 150, Hope Street, Glasgow, have carried out the ventilation of Messrs. Wardle & Davenport's new warehouses at Leek, Staffordshire, by means of Mackay's patent direct-acting ventilators of an ornamental design.

IT has been decided to place a new Cambridge quarter chime clock in the ancient church of Waddington-in-Craven, West York's, showing the time upon two large external dials. The clock is to be a memorial of the late Mr. Jas. Walmsley, a great benefactor to the church, and for many years churchwarden. Messrs. Wm. Potts & Sons, clock manufacturers, Guildford Street, Leeds, have the work in hand.

JOTTINGS.

A JURY in the Court of the High Bailiff of Westminster have awarded Mr. Blurton, an outfitter of Holywell Street, Strand, £8,470 as compensation for the acquirement of his premises by the L.C.C. for the purposes of the Strand improvements.

ACTING upon a report of the engineer and chief superintendent, Mr. W. R. Court, the Baths Committee of the Liverpool Corporation recommend the City Council to approve a scheme for the erection of baths in Lister Drive, and to apply to the Local Government Board for sanction to borrow £24,000 for this purpose.

THE committee of the Northern Police Orphanage and Convalescent Home at Harrogate have decided to erect a new convalescent home on the St. George's Estate, and plans for this home, to accommodate 30 convalescents, have been selected. A sum of £8,000 is required to defray the cost, and of this amount upwards of £3,000 has been given or promised.

IN connection with the large locomotive engine works which are being built on the Springfield Estate, near Darlington, by Messrs. Robert Stephenson & Co., Limited, there is a project for the erection of 582 houses on land in the locality. The company have had plans drawn of various kinds of houses and cottages, including semi-detached buildings of a somewhat better class. It is not intended by the company, so far as can be ascertained, to build houses themselves, but the land will be sold to builders and others to carry out the scheme upon the scale and plans laid down by the company.

THE Corporate Property Committee of the Scarborough Town Council have accepted contracts, amounting to £13,532, for the conversion of St. Nicholas House into municipal offices, and for the addition of a wing to the present building. The committee had previously accepted contracts for the installation of the electric light, for special fittings, and for the heating of the building, which brought the total cost of the work up to £15,500, exclusive of extras. St. Nicholas House was formerly a private mansion, and was purchased from Mr. John W. Woodall. It stands at the corner of St. Nicholas Street, on the cliff overlooking the South Bay.

A NEW Metropolitan Fire Brigade station has been opened in Redcross Street. The freehold site occupied by the new station has a frontage of about 90 ft. to Redcross Street, and was purchased for £31,000, while the cost of the building has been upwards of £12,000. The chief "run out" is arranged so as to be immediately opposite the scene of the great Cripplegate fire. In the upper part of the building there are 13 suites for married men and a number of single men's quarters. The station, which is lighted with electricity throughout, has been built by the Works Department of the County Council, under the direction of Mr. W. E. Riley, their superintendent architect. A new fire station has also been erected in Pennard Road, Shepherd's Bush, at a cost of over £12,000. This station also is provided with all modern improvements.

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The British Architect.

LONDON: FRIDAY, APRIL 5, 1901.

THE QUEEN VICTORIA MEMORIAL IN LONDON.

THERE seems to be misapprehension as to the scope and purpose of the great Victoria Memorial. As a matter of fact, it is a scheme which will dignify and beautify London in a far more definite and practical way than most of us have dared to hope. If the idea at present in favour be carried out, London will be able to boast of one really magnificent thoroughfare near its very heart. For the plan proposed is no less a one than the architectural treatment of the Mall from end to end, and we understand it includes possibly the opening out of the Mall directly into Trafalgar Square. This is really bringing the Palace before the people! The memory of Queen Victoria will certainly in such a way be perpetuated in an ever present manner in the very heart of London in a manner that no merely sculptured memorial could do. For here we shall have a Royal thoroughfare leading direct from the Palace of the Sovereign to the very centre of London life. This architectural treatment of the Mall would no doubt include a fine entrance-way from Charing Cross and a grand *Place* opposite Buckingham Palace, which would be centred by the sculptured memorial of the Queen, possibly under a fine sculptured canopy. Even Buckingham Palace itself might, perhaps, be rejuvenated and vastly improved. The widening of the Mall and making the main thoroughfare axial with the centre of Buckingham Palace, and accentuating it at either end by fine architectural and sculptural effect, is a great project truly worthy of a great occasion.

The Memorial Sub-Committee have already put the sculpture work into the hands of Mr. Thos. Brock, R.A., but the architectural portion of the memorial is to form the subject of a competition amongst the following five selected architects:—T. G. Jackson, R.A., Aston Webb, A.R.A., Ernest George, Sir Thomas Drew, R.H.A. (Dublin), and Dr. Rowand Anderson, R.S.A. (Edinburgh). It is intended, so we are told, that this piece of architecture shall be "of great costliness and of matchless splendour." Well, it will not be difficult by any means to fulfil the first part of this big intention, but to dream of matchless splendour in connection with modern architecture is, we are afraid, an idealism that is not very likely to find fulfilment. And yet the opportunity afforded by such a competition is, we should think, perfectly unique in these prosaic matter-of-fact times. No regulations as to style or composition to tramel the imaginative flight of architectural genius, no bugbear of a limit of cost to make the beauty of ornament an unaffordable luxury, but a free unhindered course to the fullest possible attainment of one's ideal of poetry in architecture! An architectural dream such as perhaps can be dreamed only once in a life-time! Both to sculptor and to architect alike this great national memorial to Queen Victoria offered an unique opportunity. To those who have already won for themselves a name amongst artists it was an occasion for a supreme effort. To those who may yet be undiscovered geniuses it gave the chance to reveal that divine light of artistic knowledge and power which has hitherto been hidden under a bushel.

But, alas! the action of the Memorial Sub-Committee seems to have effectually prevented a full and proper advantage being taken of the opportunity offered. The sculptors have been even worse treated than the architects, for there is not even the semblance of a competition. Were there no other men but Mr. Brock capable of doing adequate justice to such a work? Were there none amongst the younger band of sculptors who could be supposed equal to undertaking it? Surely in a case like the present every sculptor worthy of the name should have had his chance. We cannot but think that the Memorial Sub-Committee have not fully and fairly considered the question, or they would not have done so grave an injustice to the eminent sculptors thus passed over, or have closed the door of opportunity to some possibly yet unknown Alfred Stevens. Mr. Harry Furniss, in his excellent address at the opening of the West Ham Free Picture Exhibition, in referring to the statues and monuments of our great cities, made one or two pregnant allusions to this very point. There was little doubt, he remarked, that favouritism was directly responsible for a good deal of bad work in our streets, and he might be permitted to give it as his opinion that that would be the rock on which this great proposed memorial to the Queen about which they heard so much would split. Are we to believe that, at any rate so far as the sculptors are concerned, Mr. Furniss's prophecy has been fulfilled, and that the favouring of the individual rather than of a real care for obtaining the best art that might be possible, has been responsible for the appointment of Mr. Brock? Who is there amongst artists, genuinely and unselfishly alive to the great opportunity, but would agree with Mr. Furniss in his opinion that it should have been open to every sculptor and architect to send in suggestions and models which might be exhibited to public view, and public judgment passed upon them. And we unhesitatingly assert that the action of the Memorial Sub-Committee in thus adopting the work of one sculptor without giving other sculptors a chance to express their ideas, is neither fair to sculptors generally, nor in the best interests of the art itself. Every sculptor should have had his chance.

So with the architectural part of the scheme. It is monstrously unjust to the architectural talent of this country to consider it to be all embodied in the five architects selected to compete. A competition of this kind is surely somewhat of a farce so far as seeking the best art is concerned. And one may say this with perfect fairness to the chosen men, who, we are sure, would as earnestly repudiate, as we do, the notion that in them alone is to be found the supreme and final note of modern architectural expression. We feel certain that the general consensus of professional opinion is that the work should have formed the subject of an open competition in the first place, as all work of a national character should. It has been urged against such competitions that they have resulted in failure. Well, what can be said of the limited competitions of the past few years? Have they been such a brilliant success as to prove their incontestable superiority to the open system? We do not think anyone who has had a practical acquaintance with architectural competitions, and has carefully guaged the results of both systems, would say so. Certainly our own experience for the past twenty-five or thirty years does not point to such a conclusion.

Another argument sometimes advanced against the open competition system is that the best men will not enter the lists against the mob. Such difficulty might possibly be overcome by exempting a certain number of really eminent men from taking part in the first competition, but including them in the second. Then they would only come into competition with the authors of the selected best designs in the first competition. This would prove, we think, a fair alternative course, and might be so arranged as to work out satisfactorily.

But that there should have been an open competition there is no doubt whatever in our opinion. We see that our contemporary, the *Daily Chronicle*, has been endeavouring to elicit the opinions of certain well-known architects on the subject, but with somewhat qualified success. There has been a natural diffidence upon their part to express themselves too boldly, lest they might be thought to be saying something derogatory to the chosen architects. Mr. Leonard Stokes, however, speaks out with considerable frankness. He says: "Have an open competition, in the first instance confined to sketch schemes, so that the committee can decide whether the memorial shall take the form of a marble arch, or a Nelson column, or an Albert Memorial, or whatever they think the most suitable; and when that is settled, then would be the time to select a few men to develop the idea. I confess that, along with others, I was very disappointed when I saw what the committee had done, and I may say, further, I was disappointed in the names they have chosen. It is not necessarily the busiest men who are likely to produce the best design. Personally, I think we want something very dignified and very classical in line, and without saying a word against the five gentlemen selected, I do not think they belong to the strictly classical school."

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Mr. Howard Seth-Smith, the President of the Architectural Association, unhesitatingly expressed the opinion that the list did not even approximate to the best men, and that the limitation to five was disastrous. "It is necessary to have a very much wider field," he declared, "before a really worthy memorial can be secured. In the first place, sketch designs should have been invited from a large number of architects, and these should have been adjudicated upon by a strong committee of assessors. Once they had agreed upon a sketch design, the successful competitor should be paid a substantial fee, and then he and half-a-dozen other selected architects should be invited to elaborate the design, and work it out in detail. Then we should in all probability have seen a memorial worthy of the occasion."

Mr. Bentley was much more guarded, inclining to the belief that it would have been best if the architect had been named by the President either of the Royal Academy or of the Royal Institute of British Architects, an opinion to which we are sure very few architects indeed would subscribe.

On every ground and for every reason we contend that the limiting of this competition for a national memorial to Queen Victoria to the five architects named is bad. It becomes a really serious matter where art is concerned to give to any man a preference where such preference cannot be held to be completely above and beyond all argument. Can it possibly be said that in this instance such preference is clearly justified in each individual case? In an open competition there is at all events no ground for complaint as to favouritism, such as Mr. Harry Furniss has hinted at, and in a rightly conducted competition preference for individuals is—or ought to be—sunk in the preference for the best design.

Protest, we fear, comes too late. But we feel bound to speak our mind plainly whether to any effectual purpose or not. The honour of the profession is at stake, which is bad enough, but the honour of the Art of Architecture itself is also at stake, and this is worse. What we desire—what we imagine every true artist desires—is that this national memorial to Queen Victoria should be truly representative of the best art of our time. Can it be maintained for a moment that the Memorial Sub-Committee have taken the wisest and surest way to achieve this much-to-be-desired result? The answer must be absolutely and emphatically in the negative.

A MODERN VIEW OF LONDON CHURCH ARCHITECTURE.—XII.

By T. F. BUMPUS.

(*Continued from page* 217.)

AT the time of the completion of St. Matthias', Stoke Newington, this steeple provoked much hostile criticism, but this it has outlived, and it may be safely said its architect was completely justified in his adoption of so striking a type, while its position, at the east end of a lofty clerestoried nave, with the aisles continued along its sides in lieu of transepts, and a short sanctuary projecting beyond it, is singularly felicitous, setting off its majestic proportions to great advantage. The cost of St. Matthias' was amazingly low, not exceeding £7,000, but, of course, the utmost simplicity of treatment was a *sine qua non*.

The success attendant upon his employment of the gabled tower at Stoke Newington seems to have guided Mr. Butterfield's adoption of it a few years later at St. Alban's, Holborn, though in a somewhat different form.

Here the architect was induced—owing probably to exigencies of site—to cast his steeple, narrower from east to west than from north to south, more into the form of a gigantic western screen or façade, which, with its short outgabling transepts, recalls St. Cunibert's at Cologne and St. Quirinus at Neuss. Much of the grand and original character of this western façade at St. Alban's may be attributed to its very piquant pentagonal belfry staircase turret; to the grand geometrically traceried window on either side of it; and to the consummate skill with which Mr. Butterfield handled his brickwork, relieving it at judicious intervals by those bands of stone which impart an air of great character to the whole. Such bands bear a very important part in the tower of St. Matthias' and also at All Saints', where the belfry windows are, in the opinion of competent judges, finer than those in the steeples of the Marien-Kirche at Lubeck. At All Saints' the architect

Photo by *W. C. Dickinson.*

ST. MATTHIAS', STOKE NEWINGTON.
William Butterfield, Architect.

surmounted his nobly proportioned unbuttressed tower with a spire—a broach of timber braced internally with iron, slated and banded at intervals with lead—so gracefully contoured that here again the German example must yield the palm.

In designing the west front of St. Augustine's, Queen's Gate, Mr. Butterfield seems to have had in his mind those extraordinary quadrangular belfries one meets with in the district of Toulouse, or the tall screen façades of Goslar and Brunswick. It is most effective, and considerable piquancy is imparted to it by not ranging with the fronts of the houses in the patrician thoroughfare of its locale. This is the only portion of St. Augustine's Church of which an uninterrupted view can be obtained, for here, as well as at St. Alban's, Holborn, All Saints' and St. Clement's, City Road (a simple but striking specimen of Mr. Butterfield's skill), the architect has not been fortunate in his site.

At All Saints' and St. Alban's the contiguity of houses forbad the piercing of their eastern walls with windows, a defect completely neutralised by the scope it afforded to the pencils of Dyce, Preedy and Le Strange. The frescoes of the first-named artist at All Saints' were executed in that *heilige* style which obtained so much favour during the fifties, presenting the deepest purity and reverential feeling, allied with exactly the amount of conventionalism consonant with the surroundings.

At St. Alban's Mr. Le Strange went into the opposite extreme. The ten subjects from the Litany, divided from each other by strips of alabaster, are not pictures—they are subordinate wall decorations, conceived in the most archaic spirit. Mr. Le Strange, who had laid aside his great work at Ely Cathedral—the painting of the nave roof—to devote himself to them, died before their completion, when they passed into the hands of his friend and admirer, Mr. Preedy. A large triptych having recently been erected in the church, the lowest of this series of ten water-glass paintings, the Annunciation, perhaps the most beautiful of them all, has been concealed from view.

Standing as St. Matthias', Stoke Newington does in its own churchyard, with the light freely admitted on all sides, there was no need for Mr. Butterfield to adopt the expedients to which he had to resort in the case of All Saint's and St. Alban's. Its east wall is pierced with an exceedingly noble window of five lights, the idea of which

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seems to be taken from that of Temple Balsall, though the tracery above the three central compartments differs—Temple Balsall having three unfoliated circlets, and St. Matthias a large circle traceried with four ingeniously disposed quatrefoils. The stained glass by Wailes which fills it, is not, indeed, of that quality which would nowadays be accepted as satisfactory, but with the exception of that by Hardman and Pugin in the east window of St. Mary Magdalene's, Munster Square, is better than any other of its date, 1852-3. It represents, in two tiers, Our Lord seated in majesty between St. Matthew and St. Peter, St. Paul and St. John; and St. Matthias' standing between St. Mark and St. Stephen, St. John Baptist and St. Luke. The effigies are well drawn, and the tinctures, if not very felicitously blended here and there, are of much brilliancy and richness, but the whole window owes much of its striking character to the employment—insisted upon by the architect—of white as a ground for the figures.

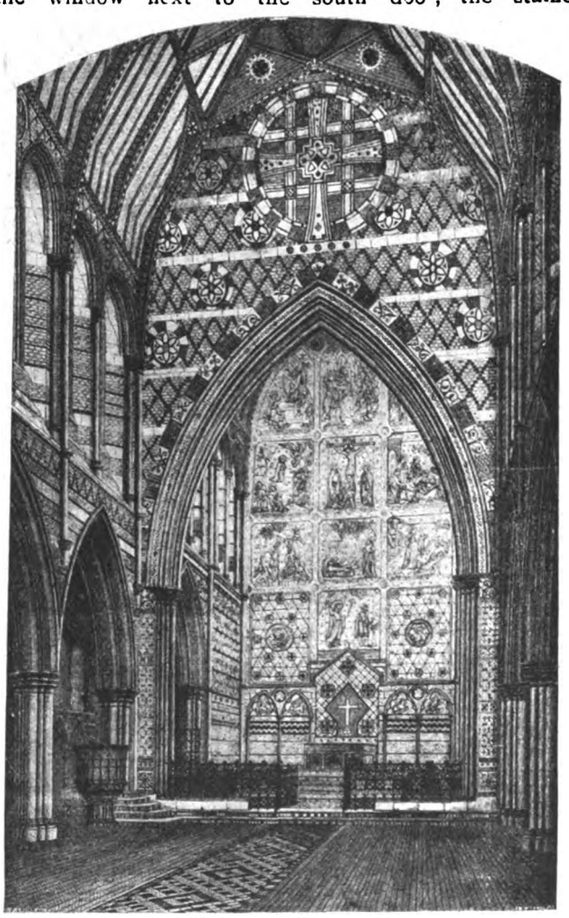
Apart from any artistic merit this east window of St. Matthias', Stoke Newington, may be said to possess, it has many solemn associations for a procession of earnest churchmen and churchwomen extending over nearly half a century.

To the stern, stately effigies therein represented, we wonder—

How many spirits, troubled with the chiding
Of the rough world, have hither turned for rest,
Like storm-tossed ships awhile at anchor riding
On some small haven's quiet breast?

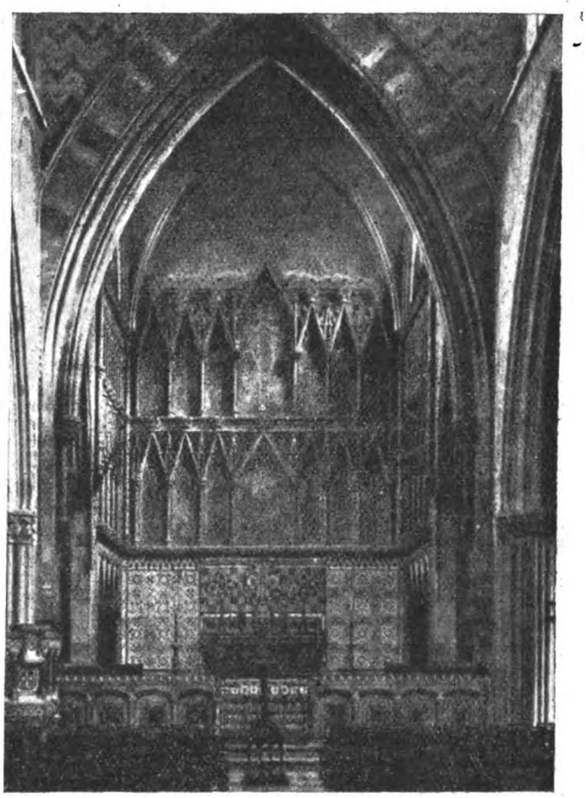
How many lips in rapturous devotion,
Wrought by no outward impulse, here have moved,
How many hearts can share one heart's emotion,
Here meeting with the lost and loved?

With the exception of that in the side chapel, and the window next to the south door, the stained



St. Alban's, Holborn.
(From a Drawing made shortly before its Consecration in 1863.)
William Butterfield, Architect.

glass in St. Matthias' was carried out entirely under the supervision of Butterfield, by which means that uniformity of design so requisite was secured. Beside the great east window Wailes executed that in the west window of either aisle at a period very little subsequent. All in the northern and three in the southern range,* as well as the great west window, were entrusted to O'Connor. Of the former, its leading merit is uniformity, and although inserted



All Saints', Margaret Street.
William Butterfield, Architect.

between 1856 and 1866 is certainly preferable to the frescoes with which in the short space of little more than a year the aisle walls have been completely covered, and of which nothing whatever can be said in praise Probably no church of the early Gothic Revival has presented so grand a field, not only to the mural decorator but to the furnisher (these terms being used in default of better), as St. Matthias', and when, a few years ago, splendid individual generosity made this possible, the structure and its spacious side chapel—gained by the removal of the organ from the south chancel aisle to the opposite one—should have been placed in the hands of an architect of acknowledged ability. To notice thus adversely work which has clearly been the fruit of much liberality is indeed an unpleasing task. It is too late now to warn; and the ecclesiologist must sit down under the annoyance of a work of genius, as St. Matthias' undoubtedly is, being in its recent fittings and decoration a failure and a mark for ridicule, and not—what it might have been—an honour to its architect and to that true Gothic Revival of which it was one of the earliest and most magnificent fruits. The stained glass in the great west window, representing in its three tiers of figures within the lights and its groups in the circle the Old Dispensation, is perhaps next to the great western and transeptal windows of St. Saviour's, Leeds, which were designed by Pugin, the finest piece of stained glass produced by O'Connor. It will be observed that all the subjects and figures in the great west window are typical of Our Blessed Lord. Thus, in the circle, we have The Return of the Dove to the Ark, prefiguring His Baptism; The Sacrifice of Isaac; His Crucifixion; and The casting forth of Jonah from the Whale; His Resurrection. In the lights the Four Patriarchs—Noah, Abraham Isaac, and Jacob; the Four Kings—David, Solomon, Hezekiah, and Josiah; and the Major Prophets, are given as types of Christ. This stained glass was inserted between 1863-65. Of the tinctures those in the right-hand pair of

*The first window counting from the west in this aisle is by Lavers and Westlake, from a design by Mr. Jas. Brooks; those in the side chapel are by Clayton and Bell, and, as small specimens of those artists' work, excellent.

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lights are perhaps superior. Throughout this window blue forms the ground work, but by the judicious use of white in the amply-robed effigies, and by its relief with scroll work, does not become monotonous. The best time for viewing this fine specimen of vitreous art, and indeed the church generally, is at sunset during summer or autumn, preferably the latter. The introduction of a great central buttress at the west end of St. Matthias' was certainly a very fine idea on the part of its architect, but the feature has not the reality which it possesses at the east end of Dorchester Abbey, from which it was obviously derived.

(*To be continued.*)

NOTES ON CURRENT EVENTS.

THE suggested amendments to the R.I.B.A. Form of Building Contract, which we printed *in extenso* last week, were duly discussed at the Institute meeting on Monday evening last. The meeting was only thinly attended, just over a score of members being present, and the discussion was comparatively brief and non-contentious. All the clauses as amended were duly accepted as they stood, with the exception of Clauses 17 and 32. In the latter part of Clause 17 a slight interpellation was made, so that it now reads:—"Should any defective work have been done or material supplied by any sub-contractor employed on the works who has been nominated or approved by the Architect, *as provided in Clause* 20, the contractor shall be liable to make good in the same manner as if such work or material had been done or supplied by the contractor, and been subject to the provisions of this and the preceding clause." The italicised words were interpellated by way of strengthening the clause. The arbitration clause (Clause 32) was rejected *en bloc*, and the clause as it at present exists was adopted, with the interpellation of the figure 16, as follows:—"(except as to the matters left to the sole discretion of the Architect under Clauses 4, 9, 16, and 19, etc.)." Mr. Edwin T. Hall very clearly explained the why and wherefore of the several amendments, but there was practically complete unanimity as to the final adoption of the clauses.

THE following five architects have been selected to prepare designs for the shrine in which Mr. Thos. Brock's statue of Queen Victoria is to be placed:—T. G. Jackson, R.A., Aston Webb, A.R.A., Ernest George, Sir Thos. Drew, R.H.A. (Dublin), and Dr. Rowand Anderson, R.S.A. (Edinburgh). The designs are to be sent in to the Memorial Sub-Committee by the end of June.

THE subjects for the R.I.B.A. Students' Competitions for 1901-1902 have just been published. The subject for the Essay Prize is "The Employment of the Older in Renaissance and Modern Architecture." The Soane Medallion is to be awarded for the best design for "A Swimming Bath for Men." The subject for the Tite Prize competition is a design for "A Royal Memorial Chapel in the Italian Style," and that for the Grissell Prize is a design for "A Roof in Iron, Concrete, and Glass of a Picture Gallery."

MORE than fifty years ago the authorities of Buffalo erected a sun-dial in front of the "First Church." A local humourist became interested in this new institution, and the City Council (so says a writer in the *Manchester Guardian*) was flooded with petitions asking for the appointment of this "respected fellow-citizen" as clerk of the dial—with a salary. Then the Council was asked to erect a lamp, so that the time might be ascertained after sunset. Then they were prayed to erect a substantial shelter over the dial to preserve it from damage by wind and rain. In the intervals between the manufacture of these documents the joker assured sundry farmers who came to Buffalo market that the dial was a free weighing machine, and gravely issued certificates of the weights of various loads of produce which he professed to have ascertained by the aid of the sun-dial! The persecution proved too much for the patience of the Council, and, despairing of a better remedy, they at last ordered the removal of the time-measurer.

THE same writer also recalls a curious pictorial joke issued by Ackermann in 1808. It represents a gouty old gentleman seated in a padded chair, to whom a footman is carrying a garden sun-dial. Hereupon the master exclaims: "What has the fellow got there? I told you to set my watch by the sun-dial." To this the servant replies: "Please your honour, I don't rightly understand setting watches by sun-dials, so, knowing your honour to be a little goutified, I took the trouble of digging up the dial and bringing it into the parlour, that you may set the watch by it yourself; and I am sure few Irish gentlemen would be at such pains, but I was brought up to good behaviour!"

WORK on the Admiralty extension, which is to face the Horse Guards' Parade, and thus constitute the main entrance to the Department, is shortly to be commenced. This means that the greater portion of the old-world garden, with its stately trees, which is attached to the official residence of the First Lord, and which will be swept away in due course. The new wing will contain between 70 and 80 additional rooms, but, inasmuch as every 150 men by which the *personnel* of the navy is increased means an extra clerk in Whitehall, it is conceivable that before very long further extensions will become a matter of urgent necessity. The *Manchester Guardian* London correspondent says it has been decided that the old Admiralty buildings, and with them Lord Selborne's residence, shall be permitted to remain intact for some years at all events, unless, of course, in the meantime the growth of the Navy should again render necessary a change of programme.

ANOTHER reproduction of the chief decorative and architectural works of Robert and James Adam has just been issued by Mr. Batsford, price 30s. This is, we should say, likely to find considerable favour amongst architects, who will be glad to obtain at so small a cost a proper representative record of the work of these talented architects. Whatever one may think of the character of "Adams" work, we must admit it was a definite and refined development of classic forms, and in so far distinctly better than the unthinking acceptance of precedent, or the characterless mixture of much modern work, often without homogeneity or cohesion. We should be sorry indeed to find Adams work still used as "copy," or to see any definite revival of that particular phase of art, but the spirit of refinement which animates it, and the definite following of style and character are things which it may well inspire. Mr. Batsford has issued a most admirable volume of reproductions comprising thirty plates, imperial folio half bound, which willbe a welcome addition to the architect's library.

AN analytical treatise on "The Principles of Planning," by Mr. Percy L. Marks, architect, has just been published (London: B. T. Batsford), and will be found a suggestive and useful book on the subject. The leading idea, the author points out, is to show the principles of planning in close theoretical and practical association, so that it may be clearly seen when and to what extent liberties may be taken with first principles. The book is in no sense meant to form an easy "crib" for particular cases, nor does it pretend to deal with all the varying conditions that may arise. It is designed simply to state first principles, and in doing so to give a suggestive and practical turn to their discussion. The author illustrates his subject with a considerable number of plans, including in his review abattoirs, art galleries, artisans' dwellings, banks, barracks, baths and wash-houses, breweries, shops, club-houses, commercial and other offices, concert halls, ecclesiastical buildings, embassies, factories, fire-brigade stations, flats, Government offices, hospitals and infirmaries, hotels, houses, kursaals, law-courts, libraries, lunatic asylums, markets, municipal buildings, museums, music halls, palaces, Parliament Houses, police-courts, polytechnics, postal and telegraph offices, schools, stables, theatres, village halls, warehouses, and workhouses. He treats of the essential features, accommodation, etc., of these buildings, and also gives us chapters on aspect, privacy and seclusion, roominess, furniture requirements, prospect, grouping, staircases and miscellaneous features, economy, and design in relation to plans. In regard to this latter point the author suggests that planning and design should be considered concurrently, as a better result is likely to accrue by this means. "Intimate as should be the relation

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between plan and elevation, it will be found," he remarks, "that the best design in a majority of cases results from giving full effect to the true lines of the plan, if the latter is well considered. Look after the plans, in short, and with comparative facility the main lines of the design will look after themselves." Two appendices are given, the one furnishing extracts from London County Council bye-laws as affecting the planning of places of entertainment, and the other setting out abstract of Schedule VII. (1900 Code), showing rules formulated by the Education Department for regulating the planning, etc., of public elementary schools.

A lecture on "Helps and Hindrances to the Development of Design" was delivered before the Edinburgh Architectural Society on the 27th ult. by Mr. W. Scott Morton.

Wanted—good picture glass of English production. The Fine Art Society make complaint as follows:—"At the present time it is impossible to get good picture glass of English production, no matter what price is paid for it. English plate glass, which had until recently the first place in the world for quality, has been continually deteriorating, until it has now lost all its brilliancy and whiteness, and all that is produced is of a bottle-green colour. Complaints are constant from artists and the public as to the appearance of pictures and water colours which glazing with glass of this colour produces, and the brunt of these has to be borne by those who are framemakers, and not by the makers, who are callous to complaints. As a result those who require glass of good colour have to go to Belgian and French sources, one of which is certainly tainted with suspicions as to whether the glass is not chemically unfitted for use upon valuable works of art. The amount of glass which is used in this country for the purposes above named must be a large one and the trade worthy of being retained in this country, but this the makers do not seem to appreciate."

In the sale last week of the Beaufort Estates, in Monmouthshire, the ruins of Monmouth Castle, the birthplace of Henry V., were put up, together with Castle House, built in 1673, and now leased by the Lord-Lieutenant of the county as the headquarters of the Monmouthshire Militia Engineers. Only £500 was bid, and the lot was withdrawn.

An appeal was made at the annual meeting of the Surrey Archæological Society, held at Guildford the other day, for subscriptions towards the cost of completing the excavations at Waverley Abbey, near Farnham. The work, said Viscount Midleton, had been at times very perplexing, owing to the many and unexpected walls and footings found of the Norman abbey mixed up with, and sometimes made use of in, the later buildings. Last year the little presbytery of the Norman church, forming part of the south transept of the later magnificent church planned by William de Bradewater, had been discovered. The long, narrow Norman nave had now been traced below the cloister. The plan of the infirmary hall and kitchen was clear, and it had become evident that there was no building between that portion of the abbey and the river. Some interesting features had come to light in the direction of the monks' dormitory, where much Norman work remained. The plan of Bradewater's church was nearly complete. There was a good deal of important work to be done west of the cellarium, where the guest houses, the infirmary of the conversi, and possibly a gateway might be looked for. These buildings of the outer court had never been worked out properly anywhere; both at Fountain's and Furness Abbeys the remains of them were anything but complete, and at the former it was known that there were a number of buildings of which no trace could be found. The society has, therefore, an opportunity of adding materially to what was already known of the plan of a Cistercian abbey. About £250 had already been spent on the work, and another £150 would be required to complete it.

Some interesting descriptions of "Norman Work in Wold Churches" was given at a meeting of the East Riding Antiquarian Society, held in the old manorial court-house, at Bridlington, on the 25th ult, by the Rev. E. Maule Cole, vice-president of the society. Mr. Cole prefaced his paper with the reminder that in the year 1070 the Wolds were devastated by order of William the Conqueror, and that, naturally, the churches suffered in the general crash. In the 11th and 12th centuries, however, much of the wreckage was repaired, and, perhaps, one of the most interesting parts of Mr. Cole's paper was that in which he fixed the age of the 13 churches which are distinguished and beautified by Norman work. The churches of Wharram-le-Street (the oldest of them all) and Kirby Grindalyth, he thinks, were built during the last quarter of the 11th century. To the first quarter of the 12th century he allocates the churches of Weaverthorpe, Wold Newton, Thwing, Little Driffield, Fridaythorpe, and North Grimston. The churches of Wetwang, Ritham, Garton, and Kirkburn are assigned to the second quarter of the 12th century, and Great Driffield Church to the last quarter. Each of these buildings possesses some work of Norman times, much of it, especially the fonts, being of great interest and singular beauty. Mr. Cole mentioned particularly the chancel arch at Fridaythorpe, the ancient statue, and the south doorway at North Grimston, the windows of Weaverthorpe tower, a massive monumental slab with the floriated cross unearthed at Wetwâng, and the fine carved doorway at Wold Newton.

At the Birmingham Assizes in August last an action was tried by Mr. Justice Wills in which George Crouch, builder, Well Street, Hockley, sought to recover from William Roberts, estate agent, Waterloo Street, the cost of 133 houses erected by the plaintiff at Selly Oak. The jury found for the plaintiff, and the case was referred to arbitration, so that the cost might be ascertained. Mr. L. Morton Brown, barrister, was appointed the referee, and he held several sittings in Birmingham. Messrs. Arnold Harris and G. Kenwrick, surveyors, called by the plaintiff, estimated the cost of the houses at £24,642, whilst the defendant's surveyors, Messrs. A. Edward and S. J. Holliday, estimated the cost at £14,228. The referee has now given his award, allowing £20,575 9s. as the cost of the houses. To that sum is added £1,125 awarded for profit, &c., and, after crediting payments already made, &c., there remains a balance due to the plaintiff of £6,231 9s.

The Health Committee of the Sunderland Corporation have adopted—subject to confirmation—a set of bye-laws which are arousing some opposition on the part of the local Property Owners' Association. Two clauses are specially interesting as affecting tenants. One reads:—"Every occupier in a tenemented house shall cause the floor of every room which has been let to him to be thoroughly swept once a day before the hour of 12 o'clock noon, and to be thoroughly washed once at least in every week, viz., Friday or Saturday, before 12 o'clock noon, and from time to time as often as may be necessary for the purpose of keeping the same in a clean and wholesome condition." Another clause provides that "every window of every sleeping-room must be open freely for at least an hour in the morning and an hour in the afternoon—unless the weather is bad, or cases of sickness render this unwise."

The Postmaster-General has addressed a letter to the Association of Chambers of Commerce appreciating the force of the arguments in favour of underground instead of overhead telegraph wires. He points out, however, that the dislocation of the latter by storms to an extent causing public inconvenience has in the past six years averaged six times a year only, the average duration of the dislocation being one hour and twenty-three minutes. Last year, however, he says, seems to have been singularly unfortunate. Much has been done to provide against injury to overhead wires by the adoption of means which the Postmastsr-General specifies. The underground system is costly and subject to drawbacks, but, after experience of the important experimental line between London and Birmingham, the Postmaster-General feels justified in extending the underground system, and will lay an underground section from Preston northwards, where the existing overhead lines are much exposed to storms. He hopes the present difficulties may be surmounted, and that the system may be further extended, but it is necessary, he says, to proceed with caution.

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OUR ILLUSTRATIONS.

PUGIN STUDENTSHIP DRAWINGS.

MEDAL OF MERIT AWARDED TO J. A. FORBES SMITH.

THIS student's selection of subjects is admirable. We have in these plates published to-day examples of the best work in Gothic and Tudor to be found in this country; Apethorpe Hall, Beverley Minster, and Magdalen College, Oxford.

SURVEY OF THE MEMORIALS OF GREATER LONDON.

A MEETING of the Committee for the Survey of the Memorials of Greater London was held on the 1st inst., under the presidency of Lord Monkswell.

Mr. C. R. Ashbee, on behalf of the committee, presented a brief report on their work in Chelsea and other parts of London. He pointed out that they had concentrated most of their efforts on the parish of Chelsea, and had, among other things, succeeded in preserving the old Jingo tree in the Chelsea Physic Garden, which was in danger of being destroyed. They had not, however, been so successful with regard to the interesting little building in the King's Road, known as Box Farm, which had been demolished, but they had managed to keep some record of it. They had also had something to say in the matter of the proposal by the London County Council to run trams along the Chelsea Embankment, as it was felt by many that the lines should take another course. It had been mooted that a scheme was on foot for the destruction of Dr. Keen's house in Chelsea, and for building on the site either a theatre or music-hall, and he thought the committee should take what steps they could to prevent any such actio n being taken. They now had a good collection of drawings and photographs, by means of which they hoped to get the people of London to recognise how beautiful were many things that surrounded them.

Sir R. Hunter moved that the first volume of the register of the committee should be formally presented to the subscribers, and stated that it had been published by the London County Council. Referring to the proposed demolition of Christ's Hospital, he said it would be a most serious loss if the site of this charming and interesting building were to be covered by streets and buildings. Every effort should be made to oppose the Bill now before Parliament dealing with the matter, in order to rescue from the hospital a certain proportion of the open space and some of the more beautiful of the old buildings. He looked upon the production of their first volume as being an epoch in the history of the society. Mr. Quinn (Chelsea librarian) seconded the motion, which was adopted.

The Chairman said that the matter of Christ's Hospital had been before committees of the London County Council, who were now considering what form their opposition to the Bill should take. It was thought that, if the promoters obtained power to override the Disused Burial Grounds Act, and build over the burial ground, they should at least give up an equal amount of ground as an open space. He mentioned that the creation of the new Historic Building Committee of the London County Council was largely due to the efforts of Mr. Ashbee.

SMALL SUBURBAN HOUSES.*

By H. R. APPELBEE.

IT is impossible in the time at my disposal to-night to do more than glance at a few of the points which influence the design of small suburban houses. My illustrations are limited to houses of not more than ten rooms, and of these I have excluded the very smallest, where it is probable no servant would be kept. Also excluded are houses having rooms for special purposes, such as doctors' and artists'.

THE SITE.

The first point to influence the design is the site. It is obvious that all, especially in London, cannot have the advantages of building on gravel or high land, but the selection of a particular road is open to most. Personally, I would not care to own a house in a road running east and west, or, even worse, north-west to south-east, unless the site is large enough to permit side lighting as well as from front and rear. Rooms should be so arranged that the sun may enter at least once every twenty-four hours. This is not always possible; but to arrange living-rooms, where it is impossible, even during long summer days, seems to me little short of criminal. Great care is, however, necessary, as different rooms require the sun at different times of the day, the general rule being that it follows with our day's work; our bedrooms should face the east or south-east, the breakfast-room south-east, the drawing-room south to south-west, the kitchen south-east, while a study or library north, with a sunny window as well, or east. In a terrace house the fronts should be south-east and north-west; in others where side light is also obtainable more latitude is permissible. As to prospect, it is nearly always the same thing for the dweller near a large town—buildings everywhere. There should, however, be trees both in the road in front and in the garden, and creepers on the house itself.

THE QUESTION OF COST.

The next point that will come under consideration is the cost, which will fix the size and number of the rooms and the amount that can be expended on their fittings and decoration. The common system of making approximate estimates by cubing or areas is apt to be very misleading. For example, the areas of all from the sitting-rooms to the pantries may be increased by 50 per cent., while the cost is only increased about 20 per cent., assuming that the heights are kept the same and the fittings of the same quality.

To illustrate this, take a terrace house 16 ft. between the party walls and 25 ft. from front to back:

Area = 25 ft. by 16 ft. = 400 sq. ft.

Enlarge to 20 ft. from party wall to party wall, and 30 ft. from back to front:

Area = 30 ft. by 20 ft. = 600 sq. ft.

Assume the heights to be the same and compare the cost. Party walls 50 ft. and 60 ft. long = 20 per cent. increase, front and back walls 32 ft. and 40 ft. = say 20 per cent. increase (is really rather less). Skirtings and cornices will follow the walls. The finish to floors and ceilings and the roofing will obviously show a 50 per cent. increase. The joists of the upper floors will, however, show more, and more depth being required owing to increase of span, and will be found to require in the particular instance quoted an additional 20 per cent.

Many items require no increase whatever, *i.e.*, range, copper, stoves, and mantels. With the drainage and plumbing work, which is very expensive, the main items of manholes, vertical soil pipes and service pipes, bath and water-closet apparatus and sinks are not increased, and it is only the horizontal pipes between them, and these to the very small amount of 20 per cent.

For the purpose of this paper I have analysed the bill of quantities of a £1,450 house, and I find on the above principles

About	£240	with no increase	=	£240
,,	930	,, 20 per cent. ,,	=	1,107
,,	280	,, 50 per cent. ,,	=	420
		And for extra depth of floor joists, say...		13
	£1,450			£1,780

or between 22 per cent. and 23 per cent. increase of cost for 50 per cent. additional accommodation. This point is somewhat emphasised because its not having been realised seems to account for much of the cramped accommodation we shall find in the plans appended.

While on the subject of cost, a word of warning should be said on what is perhaps the greatest architectural sin of the Victorian age, viz., the façade built in a more expensive manner than the return faces. This arrangement

* A paper read betore the Architectural Association on the 28th ult. We shall give Mr. Searles-Wood's paper read at the same meeting on "Larger Suburban Houses" in our next issue.

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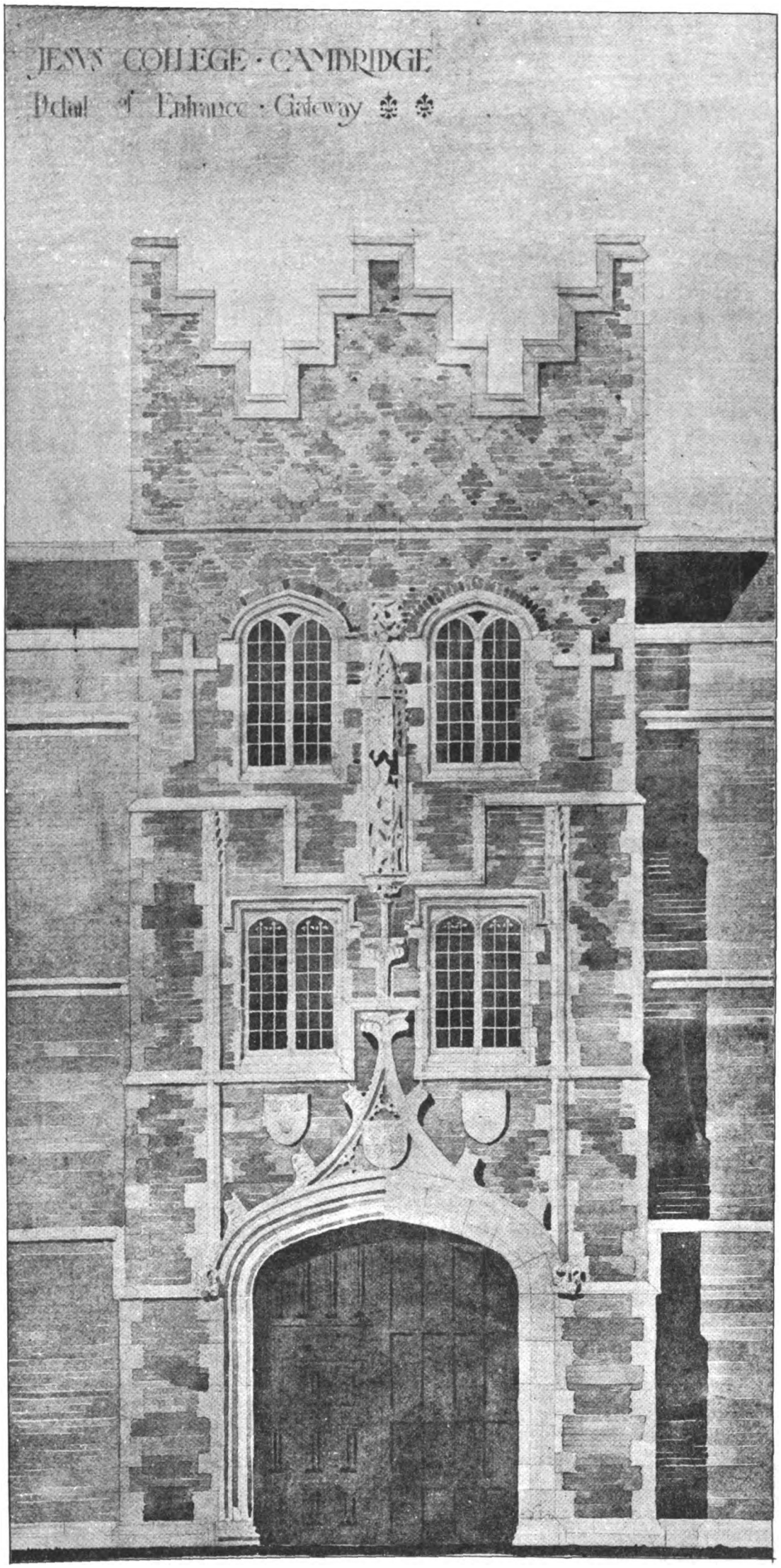

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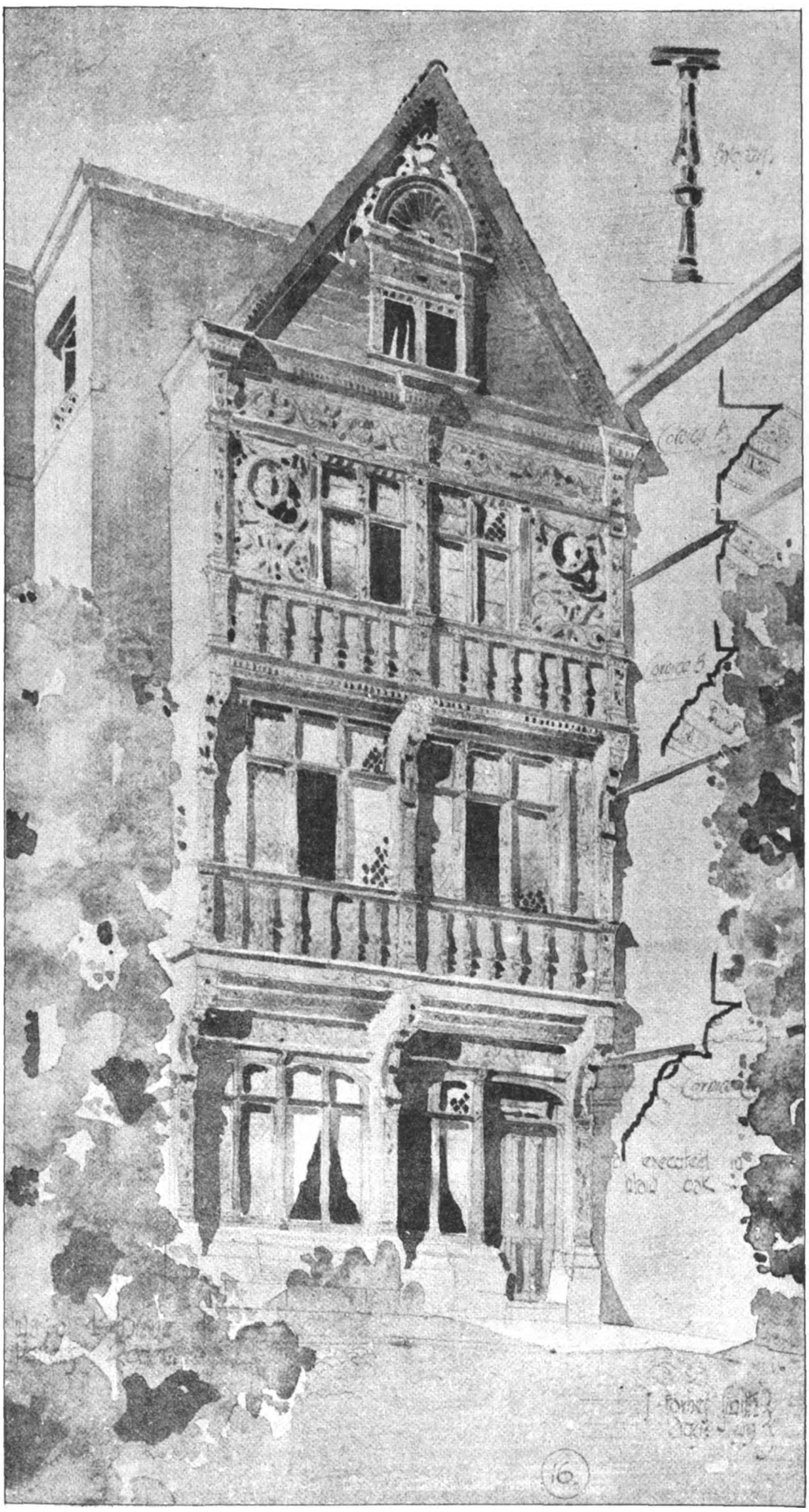

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MAGDALEN COLL: OXFORD · SKETCH OF TOWER · ·

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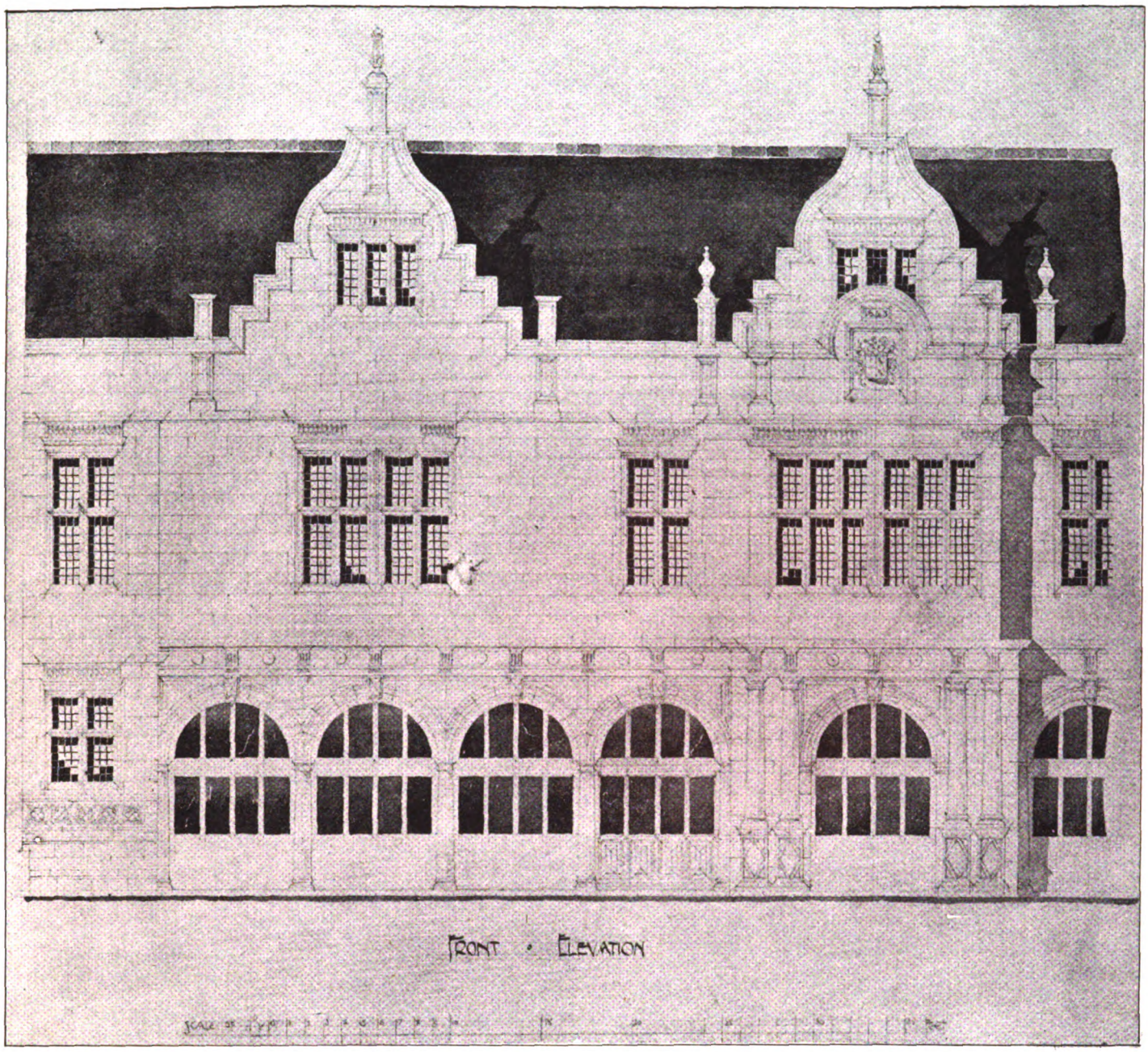
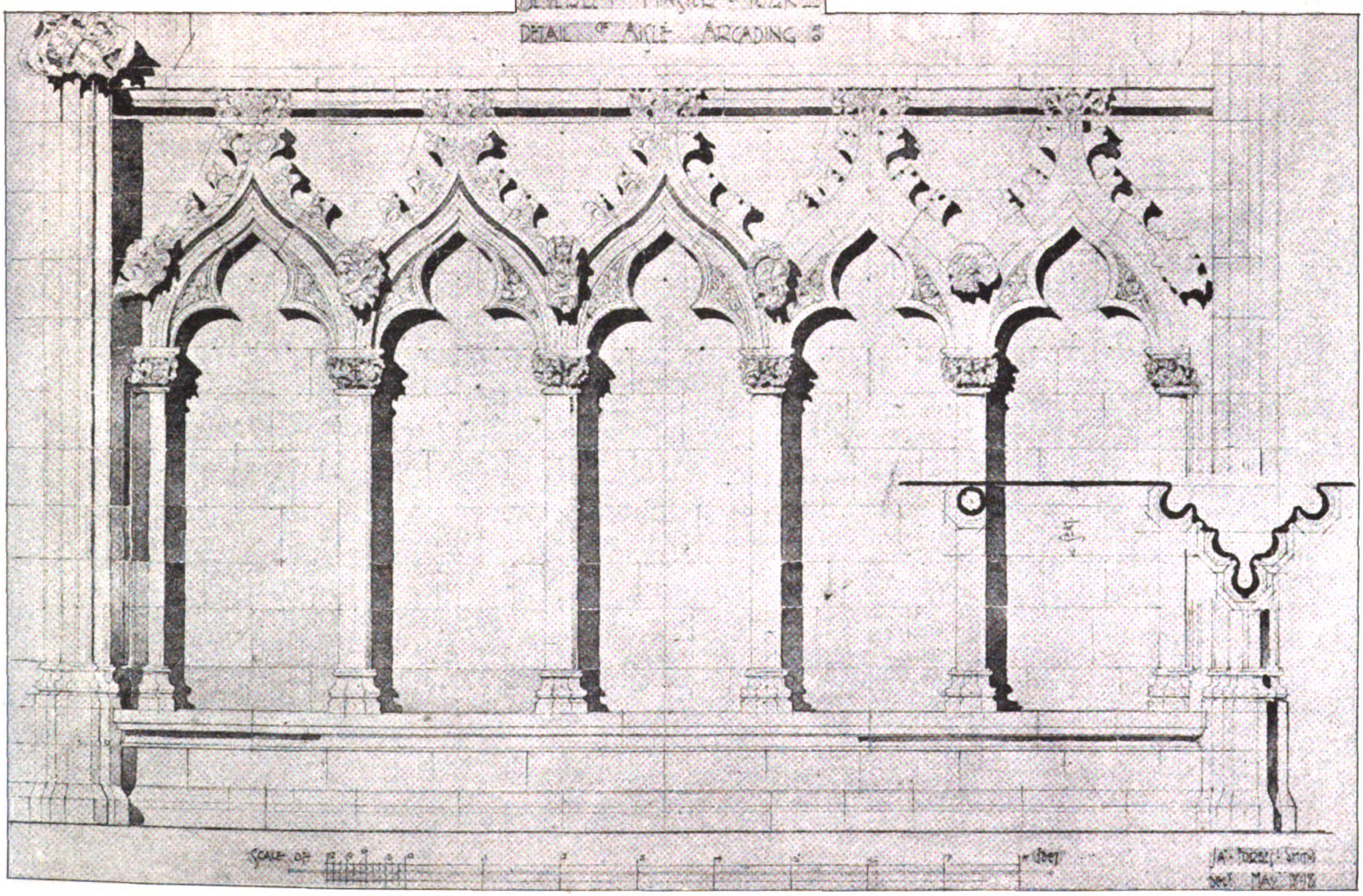


FRONT ELEVATION

BEVERLEY MINSTER YORKSHIRE

DETAIL OF AISLE ARCADING



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gives a thin cardboard-like effect and entirely destroys architectural solidity. It would be cheaper as well as more artistic to build the main front of similar materials to the sides and back. Perhaps a new reign and new century will alter this.

The first sketches should always show the principal furniture, and the relationship of doors, windows, and fireplaces should be considered with regard to each other and to the furniture.

Inside *v.* Outside Chimneys.

If the fires are well grouped, two or, at the most, three chimney-stacks will be required. If they are on inside walls, the house is more economically warmed, and there is less chance of a down-draught from a cold flue. On the other hand, a compact plan usually brings the internal doors together around a small hall or landing, and in order to prevent the doors spoiling the sitting space around the fires, or the plan from becoming straggling, the chimney breasts have usually to be planned in the outside walls.

The Casement *v.* the Double-hung Sash.

The double-hung sash is unquestionably convenient for lighting, ventilation, cleaning, and it is easy to keep clear of blinds or curtains; it is easily made weathertight and is simple to fasten, but it probably requires more skill to make its appearance equal to that of a casement. The mullioned window, especially when long and low, and without a transome, is undoubtedly picturesque. The casements are difficult to keep weathertight unless they open outwards, in which case one at least of an odd number of lights can never be cleaned from the inside of the room, and they interfere with flowers on the window-sill. An even number of lights for cleaning purposes must have all to open in pairs. Opening inwards overcomes the cleaning, which is perhaps the greatest difficulty, but makes others with blinds, curtains, or a window-seat, and the absence of the weathertight qualities.

Dining, Drawing, and Sitting Rooms.

The dining-room in a house of this class is the most important room, and in planning this the furniture should be sketched in, and its dual use as room for meals and the family sitting-room taken into consideration. A dining-table varies from 3 ft. 6 in. to 4 ft. 6 in. wide, and there should be room for one 6 ft. to 7 ft. long, and more at times, and a sideboard, one or two armchairs, often a couch or settee; and if there is no study, the books of the house and a writing-table will be here also. The room, therefore, should not be too small (as it often is), and in this room in particular it is well to remember that doubling the area will not double the cost of a room. The best aspect for this room is south-east. Where this room is general living-room as well as dining-room, a large bay or transept, making the room "L"-shaped, gives an interesting as well as convenient room. The bay is purely living-room, the other end of the "L" having the dining-table, the remaining portion has the fireplace, and may be considered as belonging to each branch of the "L" in turn.

The drawing-room in small houses should be generally somewhat smaller than the dining-room, and is pleasant if it has the afternoon sun.

A third sitting-room is a useful addition, and if on special occasions it can be thrown into connection with one of the others, so much the better. It serves as a breakfast-room the day the dining-room is "turned out" (in one house I know the hall serves this purpose well, callers being unlikely at so early an hour). Its chief use will vary very much in different houses, as breakfast-room, morning-room, library, and den.

Bedrooms.

Roughly one-third of our time is spent in bed, and, therefore, the bedrooms of the house should have particular care in their planning. An adult should have 2,500 cubic feet of air per hour, equal to a room nearly 20 ft. by 13 ft. by 9 ft., therefore the necessity for ensuring the repeated change of air in a room is obvious. Not only an exit flue but an inlet is required. A deep bottom bead on a sash window enables air to enter at the meeting rail, I do not think the casement can be made to give this advantage. Sun also is very essential to keep the room sweet and healthy, and should enter early in the day. A bedroom hot in the evening from a setting sun is disliked by most people. If the room is near an internal angle of the building, see that the window is not commanded by one in the return wall. In planning the room, show the principal furniture, the bed, with the light, if possible, from the side and space for a wardrobe. The dressing-table should have the back of the mirror to the window or between the windows if there are two; consideration should also be given to the morning opening of the window without having to move furniture first. In artificially lighting this room one light should be so arranged with regard to the dressing-table, that the light falls on the dresser's face and not on the mirror. In a small room, if the bed occupies the position already suggested, this one light will probably serve the whole room. If electric, it is convenient to be able to switch it on and off from either the door or while lying in bed.

Bath, Lavatory, and Water closet.

In connection with the bedrooms the bath-room will be much used, in these small houses it assumes a much greater relative importance than in large houses. In addition to the bath there should be a fitted lavatory, both to have hot and cold water (this arrangement means a great saving of labour in the house by lessening the amount of hot and cold water carried to each bedroom, and subsequent removal of slops). Some polished copper hot water rails for airing towels are useful, and help to warm the room. The bath most commonly used has a roll top edge and no casing; this seems to me a great mistake. As a rule, casings should be omitted whenever possible, that every part may be kept clean, but a bath is so big in bulk and has usually to be placed against the wall so that no one can possibly reach over to clean the vertical space between the side of the bath and the wall. The shallow space between the bottom of the bath and the floor is almost as bad. Splashing over of water, often soapy, is inevitable, and the dust clings.

As near as possible to the bath-room should be the upstairs water-closet, but never in it, although one sees illustrations of this. These two apartments seem to be the most difficult of all to arrange, they should be near the bedrooms, since the bath-room partially acts as a dressing-room, yet so retired that persons using the water-closet should not advertise their movements all over the rest of the house, and to this end do not permit any borrowed light from one or the other to a neighbouring passage, and be very careful in the selection of the water-closet apparatus and the water waste preventer that they may be as silent as possible. Next it is most important to remember that a water-closet is not merely an apartment 6 ft. by 4 ft. or thereabouts which may be partitioned off anywhere. It must not be overlooked that it is often 30 ft. high; in other words, the soil-pipe is an essential part of it, and if you place a water-closet on the principal front near or over the entrance door, this soil-pipe and the ventilation pipe which extends it will spoil the effect of everything. Bath and lavatory wastes are nearly as bad. Over the scullery, or some of the adjacent pantry or kitchen parts, is the natural place; but see that the water-closet is not over the larder—a point to which it always seems to gravitate. All places having water supplied to them should be as near to one another as possible, for economy of pipe work and also because of accidental overflows, a long distance, too, from the kitchen boiler to the bath or lavatory generally means that the circulating pipes have to cross hall or sitting-room; and as few people care to see them exposed here, they get boxed up in floors and other improper and inaccessible places. To sum up this part, the bath-room and water-closet should be regarded as very large, their wastes extending down to the drains, their supply and ventilation pipes go up to the cistern and ridges of roof, and the bath has also a horizontal extension to the kitchen boiler.

The Kitchen, Offices, and Servants' Quarters.

These in small London houses are usually very cramped and deficient—at least, to those like myself, who have had some country training first. The points about increase of size should be borne in mind here in particular. The kitchen is also the servants' living room, and therefore should have as good an outlook as possible, and some sun, preferably in the early morning. Adjoining should be the scullery, primarily intended for the keeping and cleansing

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of the cooking utensils and the rougher part of the preparation of the food, but many other duties are now thrust on to it. It is the place where nearly all the dirty work of the house is done, such as cleaning boots and knives, trimming lamps, washing up greasy plates and dishes; it is also frequently fitted with a gas stove, and becomes the chief cooking place in hot weather.

It needs a copper for the rougher laundry work that is always done at home, it is also the storage place for brushes and brooms, and we are frequently asked to believe that a space about 6 ft. square is all that is necessary. The larder must be placed so that it can be kept cool and away from the steam of the scullery copper. A lock-up store should be provided, where the lady of the house will keep extra groceries in reserve, and where best dinner and other services and glass are kept. An exceedingly useful addition, even in the smallest house, is a china or housemaid's pantry, provided with a lead-lined sink. Here tea and breakfast services are washed and stored, also plate and glass. Table-linen is also kept here. By attending to the lighter work here the mistress and young ladies of the house can assist without interfering with the servants. If planned as an ante-room between the kitchen and main house, it will also act as a ventilated disconnecting lobby, and help to prevent an unavoidable cookery smell extending all over the house.

THE STAIRS.

The stairs may be made the most picturesque part of the house, but they must be practical also; they will have to be used by the very young and the infirm. Winders are often dangerous, and should never be curved on plan (as they often are at the foot of the stairs) if it is intended to carpet them. Bulky furniture will also have to go up and down, and at times a coffin.

THE PLAN.

The width of the site is the next point that will determine the plan. Narrow sites must make the house one of a row; at 25 ft. it is possible to make it "semi-detached"; 40 ft. to 50 ft. is the least on which the smallest detached house will look well.

The varieties of plan possible are more than, I think, is commonly supposed. In a terrace-house the simplest is to put two rooms on a floor facing the front and back of the site, respectively, a part of one being cut off for the staircase, or the staircase may be put in between them. In these cases the kitchen and offices occupy a basement story, two sitting-rooms on the ground floor, with probably two floors of sleeping rooms over. Constructively cheap, owing to small amount of foundation and roofing (which the increased thickness of walls will not outweigh). They are very inconvenient, owing to the amount of stairs. There is, of course, three times as much staircase in a four-story house as in one of two stories. The first variation is to bring the kitchen to the ground floor in a wing behind the stairs, with the result that the look-out from one sitting-room is quite spoiled, the scullery or coals enjoying the view. Another arrangement transposes sitting-room and kitchen department, opening the kitchen from the centre of the house. In both these types the getting in and out of coals and dust is a great difficulty unless there is a back way. In the Midlands it is a common practice in small houses of this kind to make a passage at the side common to two houses for this purpose, and as a tradesmen's entrance.

Larger terrace houses are obtained by placing the drawing-room or a study upstairs and an additional floor of bedrooms. If this is done, great care must be taken with the approach. Most of us can probably call to mind examples where the stair is too narrow, and the bath and water-closet department too conspicuous *en route*. All terrace houses are open to many objections—the difficulty of getting sunshine to all rooms has been mentioned, and the difficulty with coals and dust where there is no basement. To these must be added that the drains, with rare exception, must pass under the building, and the transmission of sound from one house to another is very considerable. Piano playing, singing, the running of children up and down stairs, and even conversation may be heard. As generally planned, the sitting-rooms of different houses have only a thin wall between them, and the front doors of two houses adjoining. The passage of sound, of course, can be lessened, where the rooms have the staircase between, but the cost is greater, there being more brickwork, and the light and air to the centre part of the house is much damaged. In the London district there is also the æsthetic objection that the party-walls must show above the roofs, and they are very difficult to treat in a satisfactory way. In many of the London districts external walls within 10 ft. of another house have also to have parapets above the roof. These points much affect the design. For example, a series of gables with their ridges over the centre of each house, and parallel to the party-walls, would work out in a most distressing and expensive manner. Wide-fronted terrace houses, *i.e.*, those having two rooms on the front, have not been mentioned, as except on plots very shallow from road to back, or with a sharp fall to or from the road where the long type is not easily fitted, they are not much in request. The chief advantage of dwelling in a suburb as against living more in town, in a flat or house of equal value, lies in having a garden or open space around the dwelling; and the desirability of this and of access to it for a wheelbarrow, etc., make the detached or partially detached house a necessity, and these latter, moreover, get us over many of our previous difficulties.

On narrow plots the semi-detached house is very like the terrace house already described. The front doors can, however, be put at the side away from the party-wall, and thus secure greater privacy, but this generally requires a wider plot. These pairs of symmetrically-planned houses seem to me to be among the most unsatisfactory designs ever produced. A symmetrical elevation to the road has a great pier instead of opening as the central feature, and this is usually capped by the end of the parapet of the party-wall, which goes up by all sorts of irregular turns so much higher than the roofs, turrets, dormers, etc., within 4 ft. or so of it. Sooner or later the houses drift into different ownership, and one paints his woodwork white and the other black, and the disaster is complete. The remedy is simple: do not plan a symmetrical pair.

Larger detached and semi-detached houses are so varied in plan they are difficult to classify.

A few actual examples were, therefore, given by the author, with some slight comment on each.

DILAPIDATIONS.*

By W. J. JENNINGS, F.S.I.

(*Continued from page* 232.)

AS to the covenant to repair, take the case first suggested, viz., where the lessee undertakes "to keep and leave the premises in good tenantable repair." The architect i asked to prepare a schedule of Dilapidations to be served upon the tenant for him to carry out, or a claim for a money payment in lieu thereof, and the question arises what is "good tenantable repair." Previous to 1890 there was considerable difference of opinion as to what was meant by the words, but in that year the case of Proudfoot *v.* Hart was tried, and a determined effort made by the Judges in the Court of Appeal to deal with the question, and they proceeded to give a definition of the words and to illustrate the application of the principle they laid down. Doubtless the definition given would be considered by the architect better than the practical application of it, but the case is so important that it well repays a careful study. It was a case originally tried before an Official Referee, who held that the tenant's obligation was to repaper with similar paper to what was on the walls before, and to repaint with similar paint to that which was on the painted portion of the premises. On appeal to a Divisional Court it was held that the Official Referee was wrong. Mr. Justice Cave stated that tenantable repair extended to commissive waste undoubtedly, and he also thought to permissive waste, and that the tenant must make good the damage going beyond ordinary wear done by his family and servants, but that he must also make good the damage done by other causes, such, for instance, as a casual storm that takes off a slate from the roof, or a stone thrown from outside which breaks a window, and if the tenant neglects to do these things and the result is that still further damage is caused to the structure, then he must make good that further damage also,

* From a paper read before the Society of Architects, March 21st, 1901

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because it comes of his not performing his covenant to do tenantable repairs. With regard to paper and paint, he thought that the tenant could not be bound to repaper or repaint simply because the former paper was worn out and the paint worn off, so long as no damage is done to the walls and woodwork by omitting to paper and paint, also with regard to whitewashing, if the ceilings as a natural result of tenancy became black the tenant was not liable to whitewash them. So with regard to the walls, the floor, the doors, the windows and all the different parts of the house, Justice Cave thought the tenant was bound where there was a breakage, whether arising from his own family or from some external accident, to repair it to the best of his ability, but was never bound when a portion of the structure had become absolutely worn out, and it was necessary to substitute a new structure in the place of it. All he thought that the tenant undertook to do was to patch the thing up so long as it was in the nature of things right and reasonable that the thing should be patched up, but when it had got to such a state that patching up was of no avail, then the tenant was not bound to put in anything new or to pay any proportion of the cost of putting in the new thing because the old one had become unfit to discharge its duty.

Had this view been successful it would have rendered a tenant's liability under a covenant for tenantable repair even less, or at any rate of not greater value than it is now with the addition of the words "fair wear and tear excepted," but when the case came before the Court of Appeal, the Court without holding that the judgment of either the Official Referee or the Provisional Court was wrong, adopted the alternative of themselves, saying that they did not agree with either, and then proceeded to lay down the principles upon which the case should be decided. The Master of the Rolls, Lord Esher, adopted the definition of Lord Justice Lopes as to good tenantable repair which, he said, meant, "Such repair as, having regard to the age, character, and locality of the house, would make it reasonably fit for the occupation of a reasonably-minded tenant of the class who would be likely to take it," and he proceeded to point out that while the question whether the house was or was not in tenantable repair when the tenancy began was immaterial, yet the age of the house is very material with respect to the obligation both to keep and leave the premises in tenantable repair, it being obvious that the obligation is very difficult when the house is 50 years older than when the tenancy began; the age of the house must therefore be taken into account, because nobody could reasonably expect that a house 200 years old should be in the same condition of repair as a house lately built. The character of the house must be taken into account because the same sort of repairs that would be necessary to a palace, would be wholly unnecessary to a cottage, and the locality of the house must be taken into account because the state of repair necessary to a house in Grosvenor Square would be wholly different from the state of repair necessary for a house in Spitalfields. There is no liability on the part of the lessee to put the house in the same state of repair that it was in when he took it, it need not be put into perfect repair, nor is there any liability to paint or paper, but if the paint and paper is in such a condition that no reasonably-minded person of the class likely to take it would live in it, then the lessee is bound to paint and paper. Again, it does not follow that the painting and papering must be of the same class as at the commencement of the lease, there might be such expensive papers and such decorative paint-work as would be inconsistent with the requirements of the class of persons likely to take the house, and because special painting and papering existed at the commencement of the lease this would not render it incumbent upon the lessee to paint and paper of the same character. It must not be forgotten that if the premises are out of repair when the lease is entered into, the tenant is bound to put them into good tenantable repair. It is also clear that the tenant must commit no waste.

The definition adopted in this case is an expansion of the definition given in earlier cases, or rather a collocation of all the different parts of the definition to be collected from those cases.

The application in actual practice of the principles laid down by the Master of the Rolls is not so easy as might appear at first sight; it is much easier to speak generally of such repairs as a reasonably-minded tenant of the class likely to take the house in question would be satisfied with, than to say in precise terms what these repairs really are. The Judge allowed himself a very wide latitude in the illustration he gave, for he said: "If when the tenancy ends the paper on the walls is merely in a worse condition than it was when the tenant went in, the mere fact of it being in a worse condition does not impose any obligation on the tenant to repaper. If it is in such a condition that a reasonably-minded tenant of the class likely to take houses in Grosvenor Square (the hypothetical case with which the Judge was dealing) would not think the house unfit for occupation, but suppose the damp had caused the paper to peel off the walls and it was lying upon the floor so that the tenant would think it a disgrace, I should say then that the tenant is bound to put up new paper. The same view applies as to painting. If the painting is in such a state that the woodwork will decay unless it is repainted, it is obvious that the tenant must repaint, but I think that the obligation goes further than that. A house in Spitalfields is never painted in the same way as one in Grosvenor Square; if the tenant leaves the house in Grosvenor Square only good enough for a house in Spitalfields, he has not discharged his obligation, he must paint it in such a way as would satisfy a reasonable tenant taking a house in Grosvenor Square."

There is room for much difference of opinion between the extreme instances suggested in the judgment; there can, of course, be no doubt that when the paper is peeled off the walls and lying upon the floor it would be necessary to repaper, but there is the case constanly arising in practice when the paper has been on the walls say three or four years and is faded in places and perhaps tarnished in other places. Most new tenants, at any rate for houses of £50 or £60 per annum, would require new paper, also painting long before it has become so bad that the woodwork was decaying, therefore in deciding upon such repairs as a reasonable tenant would require, there is plenty of scope for the judgment and experience of the architect, and it is more than probable that the judges themselves will have to narrow down considerable for future guidance the application of the principle illustrated in this case.

To pass to the obligation under the second kind of repairing covenant, viz., under which a tenant is bound to "well and substantially repair." Great difficulty often arises in the cases of old buildings under a lease granted many years ago, containing a general covenant to repair in some such terms as the following, viz., that the lessee shall "well sufficiently and substantially repair uphold," etc. At the expiration of the lease the tenant may be called upon to carry out such sweeping works as amount practically to rebuilding; generally the matter is settled by a money payment, but before this can be arrived at it is necessary to say what repairs the tenant is legally liable for under the covenants of the lease, and in arriving at a decision it is very important to consider carefully the age and general condition of the building as it would have been at the commencement of the term, as where an old building is demised, and the lessee enters into a covenant for substantial repair, it is not meant that the old building is to be restored in a renewed form at the end of the term, or of greater value than it was at the commencement of the term. What the natural operation of time flowing on effects and all that the elements bring about in diminishing the value constitute a loss which, so far as it results from time and nature, falls upon the landlord. This was laid down very clearly by C. J. Tindall in Gutteridge *v.* Maynard (1 Moad and Rab, at p. 336), and this view was adopted in the Court of Appeal in the case of Lister *v.* Lane (1893, 2 Q.B., 217). This case is so important that a short summary of it may be found useful. It was a lease of a house in Lambeth containing a covenant that the lessees would, when and where, and as often as occasion shall require, well, sufficiently, and substantially repair, uphold, sustain, maintain, amend, and keep the demised premises, and the same so well and substantially repaired, upheld, sustained, maintained, amended, and kept, and at the end of the term yield up to the lessors. Before the end of the term one of the walls was bulging out, and after the lease had expired the house was condemned as a dangerous structure, and was pulled down; the lessors sought to recover from the lessees the cost of rebuilding the house. The house was at least 100 years old, and probably much

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older; it was built upon a timber platform resting on a boggy or muddy soil, and the bulging of the wall was caused by the rotting of the timber. The solid gravel was 17 ft. below the surface of the ground. There was evidence that the wall might have been repaired during the term by means of underpinning. It was held that the defect, having been caused by the natural operation of time and the elements upon a house, the original construction of which was faulty, the lessees were not under their covenant liable to make it good.

With regard to the question of underpinning, which, it was contended, might have been done to prevent the wall bulging, it is to be borne in mind that this would not have been "repairing" the thing that was put in originally, viz., the timber platform, but it would have been something of quite a different character, and this being so there was no liability upon the tenants to carry out underpinning, and it was out of the question to repair the timber platform without pulling down the house, and however large the words of the covenant to repair may be, a covenant to repair is not a covenant to give a different thing to that which the tenant took when he entered into the covenant, he has to repair that which he took, not to make a new and different thing, and, moreover, the nature and condition of the house itself, the result of time upon that state of thing, is not a breach of the covenant to repair.

The Lord Chief Justice in this case said:—"You have to look at the condition of the house at the time of the demise, and amongst other things the nature of the house, what kind of house it is, if it is a timber house the lessee is not bound to repair it by making a brick or a stone house, if it is a house built upon wooden piles in soft ground the lessee is not bound to take them out and put in concrete piles."

It will, of course, be remembered that all fixtures and fittings belonging to the freehold are subject to the same conditions as regards repairs as the house or building itself, but in practice cases occur where the ownership of the fixtures is disputed. The rule with regard to fixtures used to be much more stringent than it is now, at one time everything affixed to the premises was held to go with the freehold, but this rule has been considerably relaxed by recent decisions. There is a very recent case bearing upon the question of fixtures, which was decided by the Court of Appeal only a month or so ago; it is the case of Ward *v.* Taylor in *re* De Falbe, where Mr. J. Byrne held that some pieces of tapestry which had been affixed by the tenant for life of freehold estates, to the walls of the drawing room of the mansion house passed on her death as fixtures, with the estates, to the persons entitled in remainder. Upon the evidence Mr. Justice Byrne found that the tapestries were fixed on the walls in the following manner: Small strips of wood were fixed on the walls (which in some parts were faced with wood) by means of nails and screws, and over these wooden strips canvas was stretched and nailed and the tapestries were fastened to these strips and over this canvas by very small tacks which did not penetrate the wooden strips. After the tapestries were put up white and gold mouldings, made for the purpose, were fixed round the strips of wood by thin wire nails and screws, some of which were long enough to penetrate the face of the wall. The judge held that the tapestries formed an essential feature of the general decoration of the room, and although the ceiling and frieze remained as before, the rest of the walls of the room were altered and redecorated to accord with the tapestries. The judge held, on the authority of D'Eyncourt *v.* Gregory (1886, L.R., 3 Eq. 382) and Norton *v.* Dashwood (1896, 2 Ch. 497), that the tapestries having regard to their position, importance, and the essential part they played in the decoration of the room, had been in effect annexed to the mansion-house and passed with it to the remaindermen.

The residuary legatee under the will of the tenant for life appealed.

Lord Justice Rigby, in giving judgment, said that the representative of the tenant for life stood in the same position as the tenant for life herself with regard to the remaindermen. At one time anything whatever affixed to the freehold was held to go with the freehold, and it was only by slow degrees that that unbending rule had been modified. But in later times important exceptions from the rule had been established. One exception entitled a person who had put up fixtures for trade purposes to remove them. That exception was not confined to the case of landlord and tenant, but extended to the case of a tenant for life and remaindermen. Another very important and well-established exception existed in the case of articles affixed to the freehold, not for the purpose of enhancing its value, but for purposes of ornamentation. Such articles were removeable by the person who had fixed them. This exception applied as between tenant for life and remaindermen, and it was of general application. The question here was whether these tapestries were affixed to the freehold so as to become part of the house or so as to be removeable at the will and pleasure of the person who had affixed them during her lifetime, and by her executor after her death. They were no doubt as firmly fixed as though the person who had put them up had intended them to remain there always, but that was not of much importance. In all cases where the article was affixed to the freehold simply for purposes of ornamentation, the exception applied.

Having now considered the responsibilities of landlord and tenant under the common law, and under the common forms of repairing covenant, it may be well before proceeding to the consideration of the actual survey, to summarise the liabilities of lessors and lessees.

Briefly then, the lessor is not liable to repair or even to rebuild in case of fire even if he has received the insurance money. There is no implied covenant that the house is fit for occupation, or that it will last during the term. Neither is the landlord liable to the tenant's customers or guests for accidents happening when he lets a house in a dangerous state, there being no law against letting tumble-down houses, and in the case of Manchester Bonded Warehouse Company *v.* Carr (1880, 5 C.P.D., 507), where a building had fallen in consequence of a floor being overloaded with flour, and rent was claimed by the lessors during the time the building was unoccupied, the Court said distinctly that they were not prepared to extend to ordinary leases of lands, houses, or warehouses, any implied covenant or warranty as in the cases of Smith *v.* Marrable and Wilson *v.* Finch Hatton, as they would be bound to do if they were to hold the plaintiffs liable for the fall of the warehouse by reason of any implied covenant or warranty. Lessees must use premises in a tenantlike manner, must commit no waste, must pay rent though premises be burnt down, must keep premises wind and water tight, a tenant for years is liable for permissive waste. Under a covenant to keep premises in good and tenantable repair, the nature of which undertaking has been previously defined, the responsibility of the lessee is slight as regards actual structural repairs, but would appear to be considerable with regard to painting, papering, whitewashing and such decorative work, a responsibility which previous to decision of Proudfoot *v.* Hart was looked upon as practically nil.

The lessee's responsibility under a repairing covenant to keep in substantial repair, etc., is much greater than that under a covenant for good tenantable repair; his liability extends to making good all dilapidations to the structure and decorations, and except such as are caused by the natural operation of time and the elements in diminishing the value, the practical effect of which is set out in the case quoted of Lister *v.* Lane, thus if the premises are old at the time of the demise he is bound only to execute such repairs as may be necessary to keep up the premises as old premises. It may be again mentioned that the Courts now seem to construe the covenant on the part of the lessee to keep the premises in substantial repair in a less stringent way than formerly, and pay more regard to the age and character of the premises than was formerly the case.

It may also be stated here that if the landlord neglects to do repairs for which he is bound under a covenant to do, the tenant is not justified in leaving the premises, neither may he execute them and deduct the cost from the rent.

A LARGE clock is now being erected in the parish church of Cold Overton, near Oakham. It is fitted with all the latest improvements, and is to the designs of Lord Grimthorpe. There is one dial facing south and a larger one facing east, and the hours are struck upon the largest bell. Messrs. John Smith & Sons, Midland Clock Works, Derby, are carrying out the work.

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The British Architect.

LONDON: FRIDAY, APRIL 12, 1901.

THE QUEEN VICTORIA MEMORIAL IN LONDON.

THE announcement we were able to make last week respecting the obtaining of designs for the Queen Victoria Memorial in London was confirmed at a meeting of the Executive Committee, held at St. James's Palace on the 4th inst. The committee, which included Sir E. J. Poynter, President of the Royal Academy, and Mr. William Emerson, President of the Royal Institute of British Architects, decided to ask Mr. Thomas Brock, R.A., to prepare a design for the group or groups of sculpture, including a statue of the Queen, which will be placed opposite the entrance gates to Buckingham Palace. They further decided to invite Sir Thomas Drew, President of the Royal Hibernian Academy, Mr. T. G. Jackson, R.A., Mr. Aston Webb, A.R.A., Mr. Ernest George, and Dr. Rowand Anderson, R.S.A. (Scotland), to prepare designs for the treatment of the western end of the Mall, where the group or groups are to be placed, and for a general scheme, should funds allow, to include an architectural entrance at the Spring Gardens end of the Mall, as well as an architectonic rearrangement of the Mall with groups of sculpture at intervals, the whole forming a processional road.

It is also to be noted that in a letter addressed to the Lord Mayor on the subject, Lord Esher, Hon. Secretary, states that the five distinguished architects were selected by the committee, "guided by the advice of the President of the Royal Academy and the President of the Royal Institute of British Architects." It is astonishing to us that these two gentlemen should have so advised the committee as to lead them to give the sculpture entirely and absolutely to one man, and to limit the competition for the architectural work to five. Indeed, we can hardly believe that they themselves could really recommend or defend such a course of procedure. At any rate it has been almost universally condemned by all the sculptors and architects with whom we have come in contact, and the letters and opinions published in the daily press fully confirm the general opinion.

One of the most important, perhaps, of the architectural critics is Mr. Norman Shaw, R.A., who, in a statement to the *Daily Chronicle* interviewer, said, we are told, that, reviewed from a national standpoint, the Executive Committee had carried out its work in a most unsatisfactory manner. The selection, which he took to be the result of the committee's labour, was but a compromise at best. First of all, the committee appeared to have selected three Englishmen. Then, in order to allay national jealousy, they threw in a Scotsman and an Irishman. Mr. Shaw foresaw endless trouble and confusion for the committee, who had not gone to work the right way. He considered it would have been much better if the competition had been an open one. Then a jury of specialists could have decided which was the best design. As it was, who was going to sit in judgment upon the designs to be submitted by the gentlemen chosen by the committee, and how were they to know that any of the work would prove worthy of so great an occasion? It would be necessary, he considered, for a body of experts to report upon all the designs, and this body should be empowered to reject them all if they fell below a certain standard of excellence.

We may take Mr. Shaw's view as representative of that generally voiced by the profession, but we might add that of the editor of the *Studio*, who remarks: "That this great National Memorial should be placed in the hands of any small group of men, no matter of whom composed, must seem a grievous error to all who have an extended practical acquaintance with the working and results of open competitions. Great Britain at the present time is remarkably strong in the possession of a brilliant generation of young and rising architects, sculptors, and decorators. Let these lesser known workers have an opportunity of showing their capabilities." This is entirely in accord with the views expressed by us last week, and we are quite confident that no one who has had practical experience of competition work in its various forms but would agree that in the present case the competition should have been an open one.

The *Times*, however, does not think so, and it expresses its opinion as follows:—"To rely on public competition and invite all comers to tender is reasonable enough when the object is to get a supply of hay on fair terms, or to construct cheaply and honestly a building according to a given specification. Even as to such matters it is, to be sure, found in practice that it is sometimes expedient to curtail the area of competition, and to impose conditions as to the capacity to tender. When we have to deal, not with the supply of stores, but the erection of buildings with national aims and artistic merits—as, for example, the new public offices—the principle of public competition proves unsuitable. Whatever may be the ultimate design, a memorial which is to be a worthy symbol of a nation's affection, the durable testimony of its sorrow, cannot be dealt with as if it were a contract for the supply of forage or the erection of barracks. It is found in practice that the best artists hold aloof from such competitions. They prefer to go their own way, and do not care to take the risks of a competition in which their merit may not be recognised. However carefully constructed may be the tribunal of adjudication, it is notorious that a design with certain obtrusive, perhaps tricky, qualities, has a better chance than another which will be permanently more satisfactory as a work of art. Out of such a contest comes something respectable and mediocre, something costly and showy, but rarely anything better."

We quote the *Times* remarks thus fully because they so obviously and completely carry their own refutation with them. In the first place, an architectural competition never is, and never can be, on all fours with competition in tendering for building works, or the supply of hay! Such a comparison is manifestly ridiculous to anyone who knows anything at all about architectural competition. Therefore it is equally senseless to make it the basis of the deduction that the memorial cannot be dealt with as if it were a contract for the supply of forage or the erection of barracks. Then again, it is quite absurd now-a-days to talk of tricky qualities in architecture deceiving the adjudicators. This is just what they do not do, since it has become the custom to have professional assessors to adjudicate upon competitive designs. It is even more silly to say that the best architects are afraid to enter an open competition lest their merits should not be recognised. We venture to say that given a proper qualified assessor, or assessors, merit would certainly meet with due and full recognition. This is quite well enough understood by our best architects. But even supposing they did not care to enter an open competition, there is, as we pointed out last week, an alternative course of letting the nominees of the committee stand aside in the open competition, and then bringing them in to take part in a final competition with the authors of a certain few designs selected in the preliminary stage.

It is just because the proposed memorial is an erection "with national aims and artistic merits" that it is important to recognise the fact that all the artistic inspiration of English architecture and sculpture is not bottled up in half-a-dozen men however eminent their names. To restrict the range of possibility to these two or three, is not only to close the door of a great opportunity to possibly unknown genius, but to limit the chances of obtaining a really good selection of designs, representative of the best work of our most representative artists. Then, again, is it right that, with all this proposed great expenditure of public money, only one sculptor should have the chance of the work, and but five architects be asked to compete for the architectural part of it? Even the *Times* seems to be a little scared when it comes to consider this point. For after saying "We are in the hands of the committee, or, to be more accurate, in those of Mr. Brock"—which is quite obvious—and hoping he will give us something to "symbolize a nation's mood," to "stand as a witness through future ages of the gratitude of a people to their Sovereign," and to "prove to future ages, what otherwise they might doubt, the competency of the Victorian age in sculpture, as well as in other arts" it concludes: "All the same, the committee must not be surprised if the indefinite-

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ness of the scheme, and the limitation of the choice of artists are not without their effect." Which is just the gist of the whole matter, and the very point for which the protesting artists contend. By thus dishing their argument against open competition with this obvious and sound conclusion the *Times* give their case away completely.

We understand the subject is to be taken into consideration by the R.I.B.A. Council, and that it is also to be raised at the Institute meeting on Monday evening next after the special business meeting. We can only hope that if this is so it will be dealt with in a broad and liberal-minded manner, and that the result may be such that, whatever the Executive Committee may or may not do, the Institute will voice its opinion with no uncertain sound. For, as the matter stands now, the gravest injustice has been done to both sculptors and architects, and a real slur cast upon the art of British architecture and sculpture as it exists at the present day. We maintain that an open competition is the only proper course under the circumstances for the Executive Committee to adopt.

A MODERN VIEW OF LONDON CHURCH ARCHITECTURE.—XIII.

By T. F. BUMPUS.

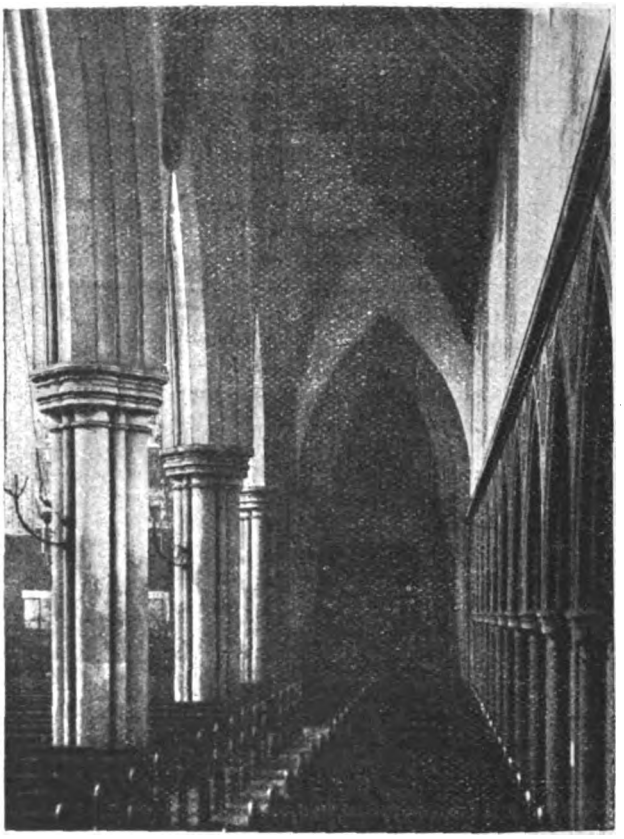
(*Continued from page* 235.)

AT St. Matthias' the aisles are low, but the clerestory very lofty. In the former are three-light middle-pointed windows of somewhat squat form, traceried alternately with a sexfoiled circle and uncircumscribed quatrefoil, and pierced, seemingly in a stone panel let into the brick, treatment very unusual in English work. In the clerestory the windows are tall ones, also of three lights, resembling those in the choir of St. Alban's Cathedral before their deformation, and with varied tracery. The greater height of the aisles at St. Alban's enabled Butterfield to introduce a continuous wall arcade below his windows, which, as well as those lighting the clerestory—less lofty than that at St. Matthias', and different altogether in its treatment—are lancets somewhat too acutely foliated. Within the last fifteen years Mr. Kempe has filled the range of lancets in the south aisle with stained glass in the style of the 15th century, the seated effigies being those of Holy Women.

The contiguity of houses precluded the architect from fenestrating but a small portion of the northern aisle at St. Alban's,* while that at All Saints' is entirely destitute of windows. There the wall has received a series of tile frescoes, executed by Gibbs from Butterfield's designs in memory of the church's first vicar, Rev. Upton Richards (d. 1873), not wholly unsatisfactory, but sufficient to cause regret that so noble a field was not offered to one of our great Christian painters. Still more annoying is the manner in which the unfenestrated aisle walls of St. Augustine's, Queen's Gate, have been cut up into a series of cusped panels filled with painting which can only be stigmatised as childish. It may well be exclaimed, "Why have we so little art in our churches?" when such noble fields as these for the exercise of the true artist are recklessly thrown away upon intrusive manufactures! At All Saints' the fenestration of the south aisle is effected by a couple of two-light windows and a three-light one geometrically traceried. The stained glass filling them is by Gibbs, and was inserted about thirty years ago in lieu of some of inferior character, but exhibiting the same iconography, which, much to the regret of the architect, issued from the ateliers of Alfred Gerente. That in the west window, a noble composition of five lights, having its inner arch cusped, is also by Gibbs, and, like the other, executed from the designs and under the superintendence of Butterfield. It illustrates the Genealogy of Our Lord, and takes the place of glass, representing the same subject which, copied by Henry Gerente from the celebrated east window of Wells Cathedral was, after his death in 1849, carried out by his less accomplished brother, Alfred.

* The long unfenestrated slip of wall in this north aisle of St. Alban's offers a fine field for the sacred artist. Let us hope that it will be worthily occupied

The only piece of Gerente's glass that has escaped removal is that in the window of the baptistery, with its effigies of Noah, St. John Baptist, and Moses. The



ST. ALBAN'S, HOLBORN. SOUTH AISLE OF THE NAVE.
William Butterfield, Architect.

drawing and colouration of this window will give some idea of the style of glass which originally filled All Saints' Church. The most pleasing window is perhaps that at the east end of the south aisle. It represents Our Lord seated in Majesty between St. Augustine, of Canterbury, and St. Edward the Confessor, and was executed in 1857 from the architect's designs by O'Connor.

St. Augustine's, Queen's Gate, has at the west end four lancets, in which the hues of the stained glass, representing seated figures of the Apostles, are much more satisfactory than those of the five-light east window, which is thrown up high in the wall to admit of a reredos and arcading similar to that in Keble College Chapel, Oxford—an arrangement rendered feasible by the architect's having given his chancel and nave the same altitude, another characteristic feature of his work.

At All Saints', Margaret Street, the vaulted roof of the chancel rises considerably above that of the nave—treatment rare in old English churches, but not infrequent among specimens of Late French and German Pointed, where, generally speaking, it has been the result of accident rather than design.

In the case of All Saints', Margaret Street, this elevation of the chancel roof constitutes one of that church's most striking and abnormal features, its introduction being due, it need hardly be explained, to the architect's desire for raising his chancel clerestory of large spherical windows enclosing foliated circles, above the abutting block of domestic buildings.

No mere capriccio, perfectly indefensible, is this feature, but one which grew naturally out of the necessities of the case, the result of a compliance with that hard "must" which, fortunately, the architect of no Pointed building need fear to obey. It was, too, one of those bold and original strokes of genius that distinguished Mr. Butterfield's churches from those of his contemporaries, and which indicate very plainly a mind which had not only thought out such matters for itself, but could give the *raison d'etre* for one and all of them.

The nave arcades of these four churches present sufficient variety for a brief comparison. At St. Matthias' Butterfield gave us one of five broad, but not very deeply moulded arches on stone piers alternately four—clustered and octagonal, the westernmost bay—it being the architect's almost invariable custom to locate his porch or porches in that position—being left free from benches.

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Thus a species of grand internal narthex is constituted, as important a factor in an utilitarian as in an æsthetic point of view, especially at St. Matthias' where the space thus gained has a more than usually impressive effect.

Within the last five years the spandrels of the nave arcade in this church have been decorated in fresco by Mr. Daniel Bell. The scale of colour is pleasant, and leads well up to the large paintings of the Crucifixion and the Session in Glory which occupy the wall space above the western and eastern tower arches respectively, and it is only just to say that the workmanship here is superior to Mr. Bell's more recent efforts in the side aisles. The subjects of the frescoes in the spandrels of the nave arches have been chosen as illustrative of the Beatitudes.

A beautiful range of columns is that at All Saints', Margaret Street, so graceful indeed as to make one wish it could be extended. Here the clustered, but not amalgamated, piers of Aberdeen granite, whose capitals boldly foliaged in alabaster elicited the encomiums of Ruskin were introduced into a complete Gothic church for the intelligible reason that their material is more patient of being turned in a mould than carved into the complex section of such a typal middle pointed column as we find employed in St. Alban's, Holborn. Four wide arches and one extremely narrow one at the west-end support the clerestory at St. Augustine's, Queen's Gate. They are carried on those stout circular piers in layers of white and puce coloured stone with simply moulded caps which latterly became a favourite form with Butterfield, employed as they were in the naves of his churches at Brookfield and Edmonton, in St. Mary Magdalene's, Enfield, and St. Clement's, City Road. The brickwork in the spandrels of the arcades at Queen's Gate is highly ornamental and surrounds an immense stone quatrefoil decorated in tiles with the effigy of an Evangelist and a Major Prophet. In the case of the four last-named churches the most western or narthex bay dies off into a square pier in lieu of being brought down upon responds, a type of arch adopted by Butterfield in the chancel at St. Matthias' and in the western part of Rugby School Chapel. Indeed, the arches may be called a feature in which that architect excelled, that separating the nave from the chancel in the four churches whose salient features we are now discussing being indeed a masterpiece.

NOTES ON CURRENT EVENTS.

A NEW competition is in view, the delegates of the Hearts of Oak Benefit Society having decided upon the purchase of certain freeholds in Euston Road and Grafton Place, at a cost of £36,000, for the purposes of new offices. These new buildings are to cost £55,000, and the society purpose putting the work up to competition, and offering premiums of £100, £75, and £50 for the three best designs sent in.

A special general business meeting of the Royal Institute of British Architects will be held on Monday evening next, when the amended Form of Building Contract will be brought up for the formal approval of the Institute before being issued. It is also intended to receive and consider a recommendation of the Council that Mr. William Emerson should allow himself to be nominated for a third term of office as President of the Institute.

Mr. William Woodward, A.R.I.B.A., writes us *re* the Queen Victoria Memorial as follows:—"Sir,—This matter is of such great importance to architects and sculptors that I have written to the Secretary of the R.I.B.A. asking for facilities to call attention to the subject at the business meeting on Monday next, the 15th inst. This is to be followed up by an open meeting in the large room of the Institute. I hope that the meeting will be a good and representative one."

For the appointment of Consulting Architect to the Government of Bombay, the President of the Royal Institute of British Architects selected two names from among the several applications received and submitted them to the Secretary of State for India, together with testimonials, and photographs and drawings of their works. Of these two the choice of the India Office has fallen upon Mr. John Begg, who was formerly in practice at Johannesburg, which he had to relinquish on the outbreak of the war.

Two architects of different towns, and near of kin, were each invited to design a building of a similar character, and in each case the architect so invited stated in accepting the offer that as his architect relative was doing a similar work in such [and such a town he would have the benefit of his experience. The result was not, perhaps, quite what the respective building owners anticipated, since the final cost of each structure is said to have figured out at 25 per cent. above the estimate!

The recent fall of stones at Stonehenge having led to much public discussion, Sir Edmund Antrobus, of Amesbury Abby, Wilts, invited the Society of Antiquaries, the Wilts Archæological Society, and the Society for the Protection of Ancient Buildings to advise him with regard to the better preservation of the famous monument. A committee representing the three bodies met on the 26th ult., under the presidency of Viscount Dillon, the president of the Society of Antiquaries, and the following resolutions were passed:—1. "That this committee approves of the suggested protection of Stonehenge by a wire fence not less than 4 ft. high." 2. "That the committee recommends, without prejudice to any legal question, that the local authorities be requested to agree to divert the existing trackway or ridgeway from Netheravon now passing through the earth circle." 3. "That stones 6 and 7, with their lintel, and stone 56 (according to the numbering on Mr. Petrie's plan) be first examined with a view of maintaining them in a position of safety." 4. "That in the opinion of this committee stone 22 should be replaced, stone 21 be made safe, and the lintel 21 and 22 be replaced in the most safe and conservative manner. The committee also recommends the re-erection of stones 57 and 58 and their lintel." 5. "That the instructions to custodians already in force be approved, with a few suggested alterations"

An interesting lecture on "Bath and the Work of the Woods" was given at the Bath Literary and Philosophical Association the other evening by Mr. Mowbray A. Green, A.R.I.B.A. By the aid of a fine series of lantern views Mr. Green described the work of the Woods both within and without the city. He referred to the elder Woods' work in Chapel Court and Chandos Buildings, leading up to the date of the building of Queen Square. The east side was begun first, and the structure was finished in seven years of the work outside the city. Mr. Green also described Eagle House at Batheaston, a villa at Bradford-on-Avon, Woolley Church, and Hardenhuish Church. A minute description was given of Prior Park, before building which 800 tons of stone were placed underground. Coming to deal with the younger Wood, the lecturer showed how he worked on the same lines as his father. With regard to the Circus and the Crescent, he thought the former must take second place. The Circus was beautiful in its detail, but the Crescent was of such a dignified appearance that the loss of detail did not seem to be felt. After describing the Assembly Rooms, Alfred Street, Brock Street, and other works of the Woods, Mr. Green concluded by giving a few examples of Palmer and Baldwin.

About 18 members of the Edinburgh Architectural Association journeyed to Clackmannanshire on Saturday afternoon last for the purpose of visiting the Clackmannan and Sauchie Towers. At the former Mr. A. F. Balfour Paul acted as cicerone, and after the architecture of the ancient structure had been examined, Mr. Paul proceeded to narrate the legendary lore of the building, commenting on the fact that it was for many years the seat of the chief of the Bruces of Scot, and in the year 1330 was the residence of King David II. From the battlements a splendid view was obtained of the modern mansion of the Bruces, Kennet House, the residence of Lord Balfour, of Burleigh, Secretary for Scotland. On the motion of Mr. Henry Keir, A.R.I.B.A., president of the Association, a vote of thanks was accorded the Marquis of Zetland, by whose kindness permission was obtained to the tower. The party afterwards drove to Sauchie Tower, an unaltered

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example of a memorial residence erected about the middle of the fifteenth century. Here Mr. John Watson acted as guide, and remarks were made on the building by Mr. W. M. Page.

S. MILDRED'S CHURCH, Bread Street, E.C., which is being threatened with destruction, is, perhaps, unique in the fact that in its interior arrangements it remains practically to this day as Wren left it, with its quaint carved sounding board over the pulpit, oak altar piece, old 17th century century paintings of Moses and Aaron, and its old high-backed pews. The church dates from 1683.

GAINSBOROUGH'S "Duchess of Devonshire" has been recovered by Messrs. Agnew after being "lost" for over a quarter of a century. It was purchased by Messrs. Agnew at the Wynn-Ellis sale in 1876 for £10,605, and shortly after its removal to their premises in Old Bond Street suddenly disappeared, the canvas having been cut out of the frame. The picture has been brought home from America by Mr. C. Moreland Agnew, whither he went some three or four weeks ago owing to a communication from the police. It had been discovered den in a town in the Western States.

A SERIES of technical handbooks on the artistic crafts is about to be issued under the general editorship of Mr. W. R. Lethaby, Director of the London County Council Central School of Arts and Crafts. The series will be published by Mr. John Hogg, 13, Paternoster Row, and each craft will be dealt with by an expert.

THE arrangements of the British Fire Prevention Committee for the current month have now been made, and include the opening of their new Testing Station at Westbourne Park, as well as the opening of the Fire Prevention Section of the Building Trades' Exhibition. This special section will be opened at the same time as the general exhibition, namely, on April 17th, and the exhibits will occupy the so-called Minor Hall. All final arrangements must be made by Monday, April 15th, communications being addressed to Mr. F. Hammond, F.R.I.B.A., at the offices of the committee, 1, Waterloo Place, S.W.

THE London County Council scheme for housing 35,000 of the artisan class in the neighbourhood of Tottenham, Wood Green, and Edmonton, at a cost of something like a million and a half sterling, was duly approved and adopted by the Council at their meeting last week. The site is known as the Lordship Lane Estate, and covers 225 acres. Only the southern side of the estate is to be developed at first, and the proposal is to erect 1,029 cottages. Ultimately it is proposed that the estate shall accommodate 33,000 persons in 4,750 self-contained two-storey cottages, while 2,000 more will be provided for in tenements over shops. The cottages are to be of various classes, and the suggested rents are:—For first-class cottages with five rooms and kitchen, 10s. 6d. per week; second-class, with four rooms and kitchen, 9s. 6d.; third-class, with three rooms and kitchen, 7s. 6d.; four rooms and kitchen, 8s.; and fourth-class cottages, with three rooms and kitchen, 6s. to 7s. Each cottage will have its own garden. In the centre of the estate it is proposed to take advantage of the River Moselle and some slightly rising ground upon its bank to arrange a public garden of about two and a quarter acres. Four other gardens are to be arranged on other parts of the estate, which surrounds the picturesque parish church. This is the largest housing scheme the Council have yet brought forward.

AN Elizabethan salt-cellar weighing 26 ozs. was recently disposed of by auction in London for £1,380, and at the same sale £1,060 was given for 13 Apostle spoons which were made in the days of James I. It is stated that these same spoons were bought in at a sale in 1897 for £650, so that in something like three years their value has increased by £310.

AMERICAN competition is again to the fore in the results of some tenders published this week for steel girder rails and fish-plates for the Dundee Town Council. The accepted tender is that of Lorain Steel Company, Ohio, U.S.A., their price bei £9,607 14s., as against the price of £10,167 14s. quoted by P. & W. Maclellan, Limited, of Glasgow, the next lowest tenderers. The third lowest tenderers are another American firm—the Pennsylvania & Maryland Steel Company—who are run very close by Dick, Kerr & Company, of London, but the Barrow Hematite Steel Company, Limited, and Bolckow, Vaughan & Company, Limited, are a long way above the American prices, as also Batchelor & Company, of Dundee.

THE Manchester City Council have agreed by a decisive vote as to the expediency of acquiring Heaton Park for the purposes of a public park. It therefore remains for the Parks Committee of the Corporation to bring the negotiations for its purchase to a definite and satisfactory issue. This we hope they will do.

AT the last meeting of the British Archæological Association, held on the 3rd inst., Mrs. Collier exhibited an ancient religious picture of Byzantine art, painted on panel, and enclosed in an ornamental silver frame about 6 in. square, with a curious filling of silver embroidery concealing the picture, excepting the heads and hands of the figures. It was an "icon," and was brought from Moscow. She also exhibited a small "shrine" of bronze inlaid with mother-of-pearl, presenting the singular feature of one foot of the crucified being much larger than the other foot. This also came from Moscow. Mr. Patrick, hon. sec., read a lengthy paper by Miss Russell upon "The Structure and Probable History of some rude Stone Forts in Scotland." The forts more particularly dealt with were those of Craig Phadriae, near Inverness, and Castle Finlay, between Inverness and Nairn. Craig Phadriae is a fort of loose stones, bearing no visible traces of vitrification, although it is probable that a real vitrified wall exists beneath the stones, forming a backbone or core, to keep the larger rampart of loose stones in place. Castle Finlay is a much smaller fort, standing on a bridle path, through which is locally said to be the old road to Perth. It is with, in proportion, a large, loose stone rampart all round, in which the natives seem to find burnt stones. There is strong probability that Craig Phadriae is really the castle on Loch Ness, where St. Columba visited the King of the Picts.

AN arrangement has been concluded by which the opposition of the authorities at Kew Observatory to the opening of the new electric tramway lines was overcome. A conference has taken place at which the Chancellor of the Exchequer, the officials of Kew Observatory, members of the Royal Society, and Mr. G. White, chairman of the London United Tramways Company, were present. After a prolonged discussion, the Tramway Company agreed to contribute a substantial proportion (amounting to many thousands of pounds) of the cost of removing the Observatory from its present site to another to be hereafter selected. The Observatory has had a very interesting, if chequered, history. It was originally erected for King George III. by Sir William Chambers, and in 1841 Sir Robert Peel brought forward a proposal for its disestablishment and the distribution of its instruments among the principal learned bodies in London. But eventually a committee of well-known men of science, including Herschell, Sabine, and Wheatstone, reported in its favour, so that it was permitted to remain. About seventy years ago a sundial was placed on the lawn in front of Kew Palace bearing an inscription to the effect that on this spot the Rev. James Bradley made his first observations in 1725 which led to the discovery of the nutation of the earth's axis and the aberration of light.

A CONGRESS on cheap dwellings is to be held at the forthcoming Glasgow International Exhibition, under the auspices of the Improvement Trust Department of the Glasgow Corporation.

WE have received a sample of the "Koh-i-noor" tracing cloth manufactured for Messrs. L. & C. Hardtmuth, of Golden Lane, E.C., which we have tried and find to be an admirable production, well meriting the encomiums it has received from all who have used it. We note the fact that the cloth has been used in the Bureau of Construction, U.S.A. Navy Department, at Washington, and has given much satisfaction after a lengthy trial of its excellent qualities.

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ENGINEERING AND SANITARY NOTES.

By CHAS. E. GRITTON, A.M.I.C.E.

The Humour of Examinations!

I THINK the most anxious and difficult work I have ever done has been the marking of answers to examination papers. But like most things in this weary world it has its compensations. One is the fun caused by some of the droll mistakes made. A set of such papers lie before me. In answer to a question on water supply, the correct answer to which would be 9 gallons, one candidate, with a profound contempt for water companies and all their ways, and apparently on the principle that it is difficult to have too much of a good thing, airily suggests 300 gallons! The next two items to which the correct answer in each case would be 5 gallons, he curiously enough devotes 3 gallons and 150 gallons to respectively! As an Examiner, one plan to which I attach the greatest importance, is to set at least one question—generally some problem which, having arisen in my own practice, I have had to solve for myself—which I do not expect students to answer, and marking high rather for attempted than for correct answers. It is astonishing how this brings out the capable man from among those candidates who have merely been "crammed" with stereotyped answers to the usual cut and dried questions.

Failing to realise that the serious destructive action of boiling water on water-tight iron drains arises from expansion and contraction of the metal, and the joints, one candidate suggests "glazing the inner surface with some material which will stand the high temperature," delightfully vague and of more than doubtful utility!

The most irritating candidate is the one who wishes to argue the matter; the most bothering, the one who, like a bad witness in a court of law, simply will *not* stick to the point. One fresh-air enthusiast advises this drastic course —"Registers" should be taken out and thrown away!

Sanitary House-cleaning.

The dustless method of house-cleaning by compressed air has been perfected by the General Compressed-air House-cleaning Company, of St. Louis, Mo., U.S.A., whose illustrated descriptive pamphlet has just reached me. Negotiations are in progress for the introduction of the system into this country, so possibly we may have occasion to refer to the subject again. It is certainly, to all appearance, a revolution in house-cleaning—no more disturbed dust settling again close by, no more removal of carpets, taking down of pictures from the walls, etc, The dust is simply collected from the room as it is without removal of furniture or anything, and conveyed direct from the premises. Think of it, ye hotel and theatre managers, librarians, and ladies of the house! One man in a spotless white uniform can clean, we are told, from eight to twelve rooms a day, including walls, ceilings, carpets, rugs, draperies, beddings, woodwork, and upholstered furniture. Grease spots and stains are removed by compressed-air without injuring the nap or fabric of the carpet. Libraries, book and other shelves cleaned without disturbance. Verily, the Americans *are* a progressive people!

How to Become a Municipal Engineer.

A useful little book with the above title, by Mr. J. Freebairn Stow, engineer to the Uxbridge R. D. Council, and formerly of the P. W. Department, Cape Colony, has reached us from the St. Bride's Press, Limited (1s. nett). Its object is to point out the duties and responsibilities of an engineering pupil training for the profession of a civil engineer, more particularly that branch known as municipal engineering. It is believed to be the first of its kind. Sample examination papers are given by W. Santo Crimp, M.Inst.C.E., Charles Jones, M.Inst. C.E., J. Patten Barber, M.Inst.C.E., and W. Geo. Laws, M.Inst.C.E., and many important hints are given, as well as a timely warning against "the cheap and nasty principle" of obtaining articles of pupilage for a small premium, with the prospect of certain failure.

Insurance Engineering.

The Insurance Press of New York send us No. 1 Vol 1. of the magazine bearing the above odd title, published this month. It is to be devoted to the science of diminishing hazards to property and life, and so appeals to everyone, as we all possess the one, if, alas, not the other also. It is specially intended for underwriters, architects, builders, manufacturers, public officials, and fire departments. Annual subscriptions, 3 dollars; 25 cents a number. It is excellently illustrated, and admirably produced. Among the more notable contents I may mention the articles on standpipe connections, by F. J. McFadden; some characteristic electric burnouts; a photographic study of fire streams, by H. Marston, Professor of Civil Engineering in the Iowa State College; fireproof and rust-proof construction of steel buildings, by Frank B. Abbott; and fire hazards of heating systems.

How the Nile Sudd is Being Dealt With.

Some interesting information on how the Nile sudd is being dealt with is given in an article by Mr. Lionel Dècle in the *Telegraph* of the 10th inst., in the course of which he writes: Men could stand on the sudd, the top of which was perfectly dry, and, in fact, hundreds of men were at work on it at the same time. Soundings with long poles showed the sudd to be from 12 to 20 ft. deep, with a channel of as much as 16 ft. in depth underneath. The problem was not to cut a channel in the obstruction, but to remove it altogether. First of all the papyrus and reeds growing on the top of the sudd were cut down and burnt. Ditches 8 ft. deep were then dug in the solid and hard peat which had been compressed by the current. Shortly after work had been started on the biggest block the whole mass got bodily detached, and for 48 hours it ran down stream without interruption, and now, where the Nile seemed before to disappear in a *cul de sac*, there is a splendid open channel from 100 to 400 yards broad, with 12 to 20 ft. of water in it. Certainly the cutting of the sudd may be looked upon as one of the finest pieces of work carried out of late years in Africa, and the highest credit is due to Major Peake, who carried out the work, with Lieutenant Fell, R.N., and Lieutenant Drury, R.N.

£1,000 a Day Profit!

At the annual meeting of Bell Brothers, Limited, at Middlesbrough on Wednesday, the recommendation of a final dividend of 25 per cent. was adopted. Sir Lowthian Bell, who presided, said the firm had made a profit of £360,000 during the year. Notwithstanding what had been said about foreign competition, he had no fear of the future of the iron and steel trades of this country if we had anything like fair play. This is encouraging.

Converting Sewage into "Pure Water."

An interesting installation for purifying the sewage and refuse liquids from a country house in North Devon, designed by Mr. A. S. Goodridge, A.R.I.B.A., of Bath, has recently heen put into operation, the analytical figures showing remarkable results, the effluent from the polarite beds being reported upon by the City Analyst as follows: —"I hereby certify that having analysed a sample of water received on the 4th day of January, 1901, from Mr. A. S. Goodridge, I find the same to contain the following:—Free ammonia, none; albuminoid ammonia (grains per gallon), ·0028; oxygen required to oxidise decomposing matters, none. This is a pure sample of water, no hesitation need be felt in using it for domestic purposes. It contains very small traces of soluble organic matter." These results were obtained by an oxidising bacterial bed composed of coke, sand, and 8 in. of polarite, the crude sewage having been merely passed through strainers and an open innoculation tank. It is all disposed of before any putrefaction takes place. The treatment, it will be seen, is of the simplest kind, the use of polarite enabling the sewage at a trifling expense to be converted into practically "pure water."

The Sanitary Inspectors Examination Board.

The next examination for certificates of qualification for appointment of Sanitary Inspector or Inspectors of Nuisances, under Section 108 (2) (d) of the Public Health (London) Act, 1891, will be held in London on Tuesday, the 7th May, and the four following days. Particulars will be forwarded on application to the Hon. Secretary, Wm. R. E. Coles, 1, Adelaide Buildings, London Bridge, London, E.C.

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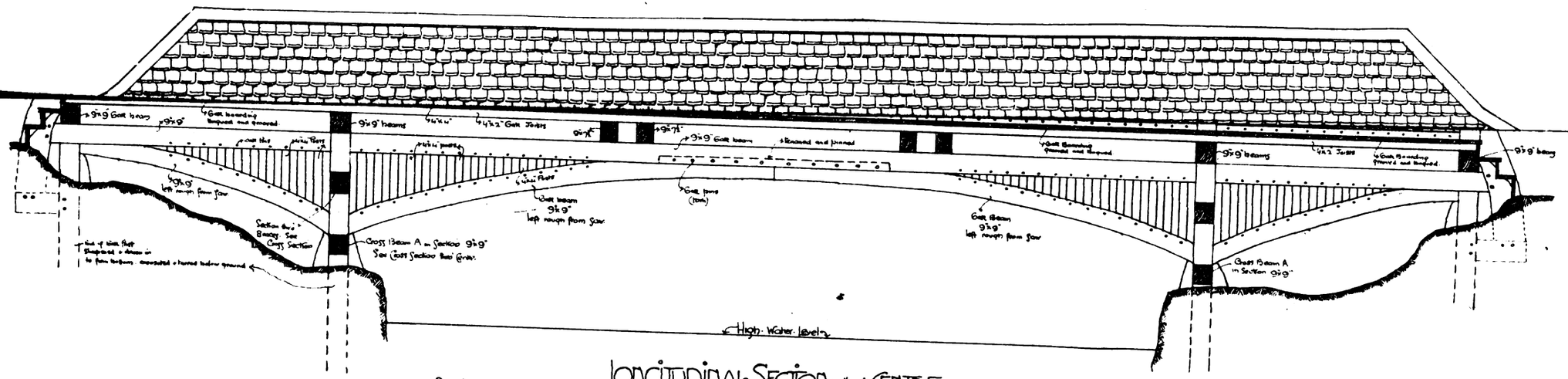
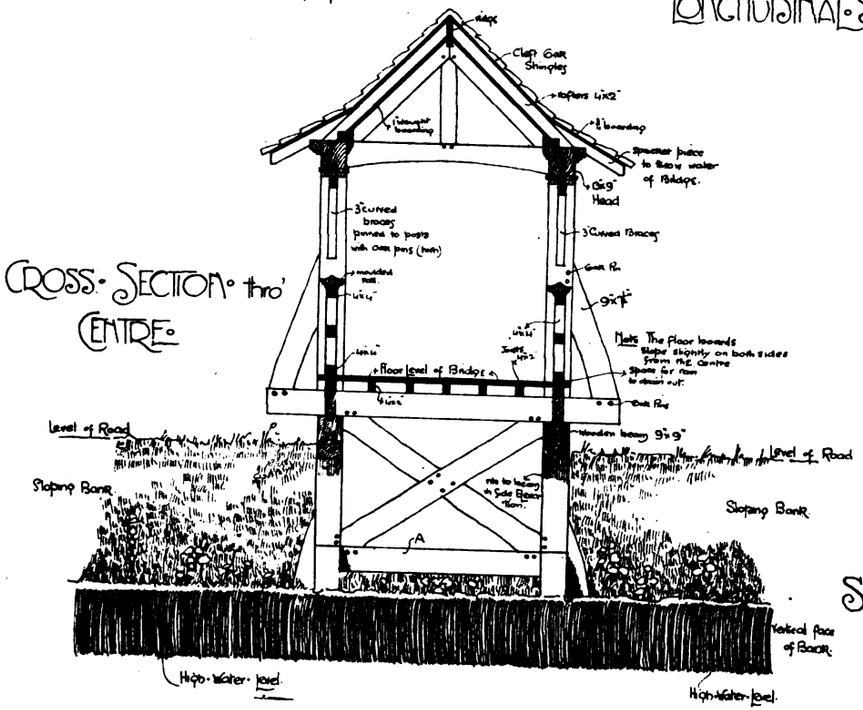
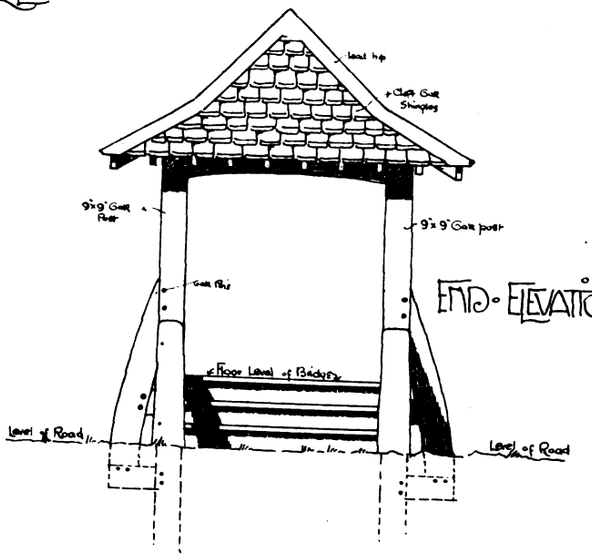


LONGITUDINAL SECTION thro' CENTRE.



CROSS SECTION thro' CENTRE.



END ELEVATION.

SCALE. Half an Inch to a Foot.

by "SHINGLE."

DESIGN BY W. STANLEY BATES, A.R.I.B.A.

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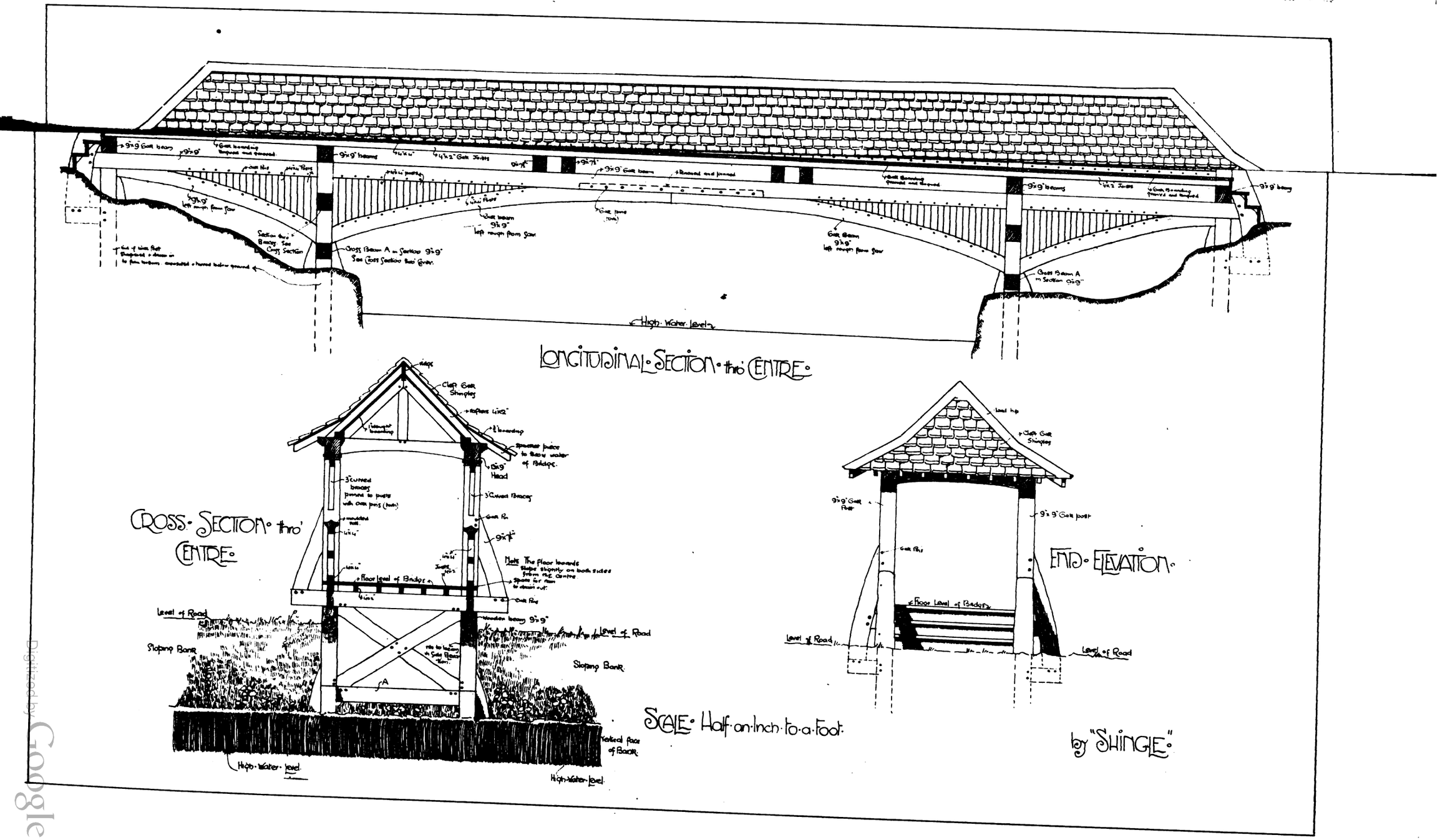

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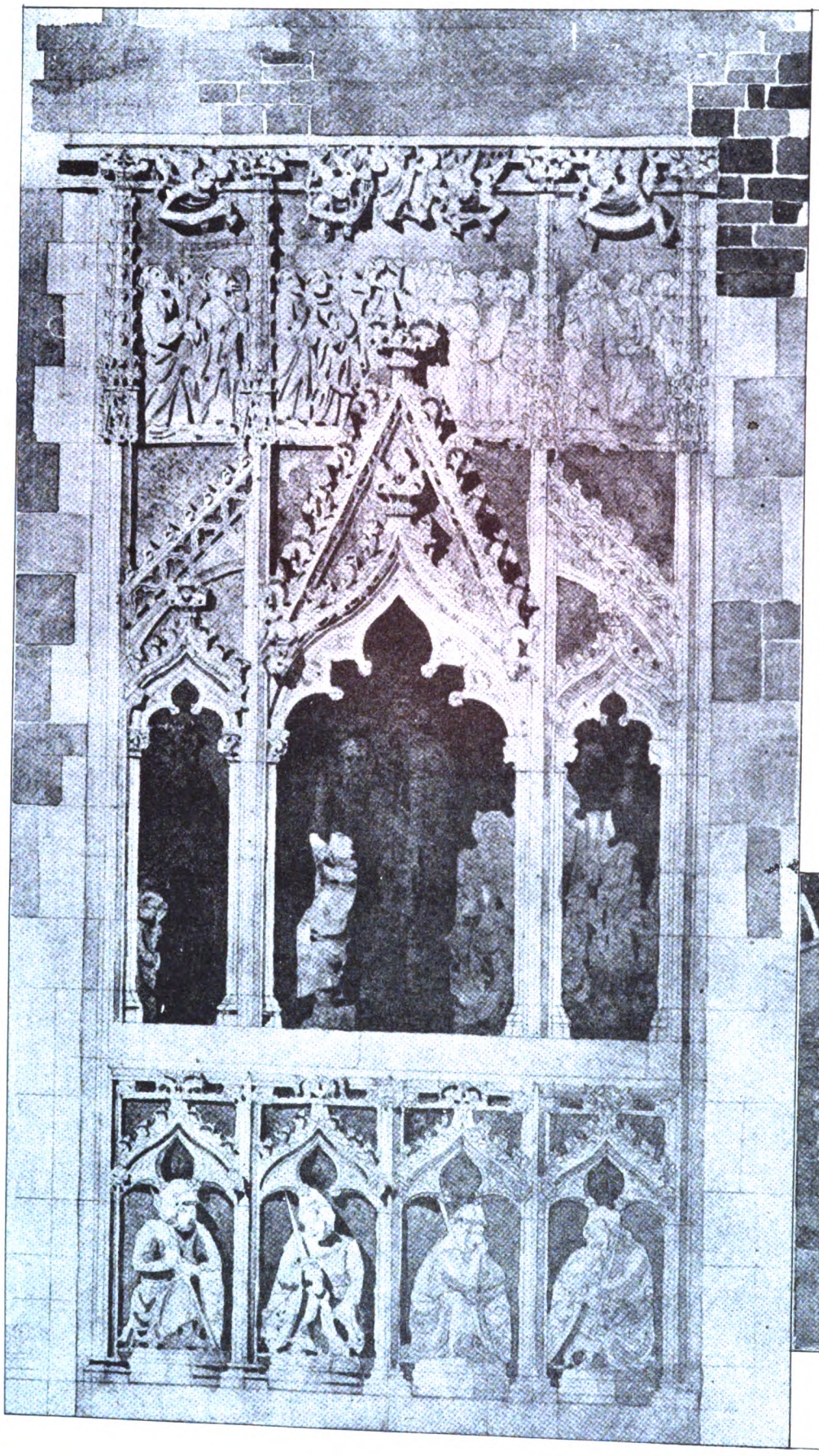
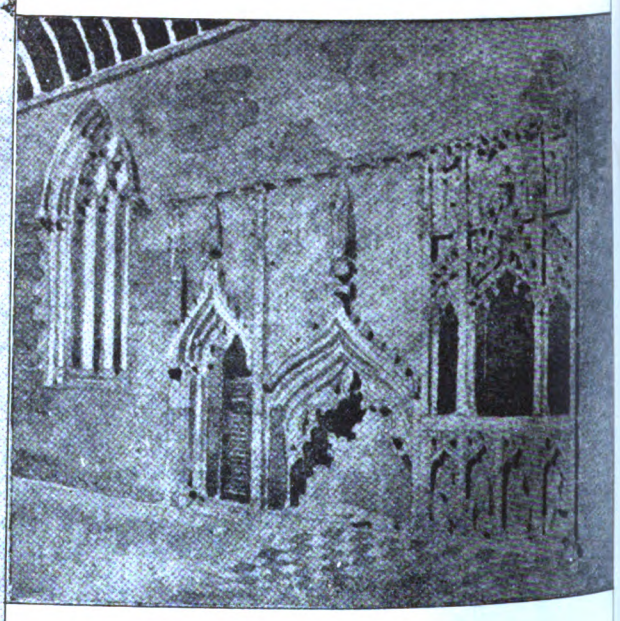


R. I. B. A. PUGIN

STUDENTSHIP DRAWINGS.

MEDAL OF MERIT AWARDED

TO J. A. FORBES SMITH.



EASTER SEPULCHRE IN CHANCEL

HAWTON CHURCH NORTHAMPTONSHIRE.

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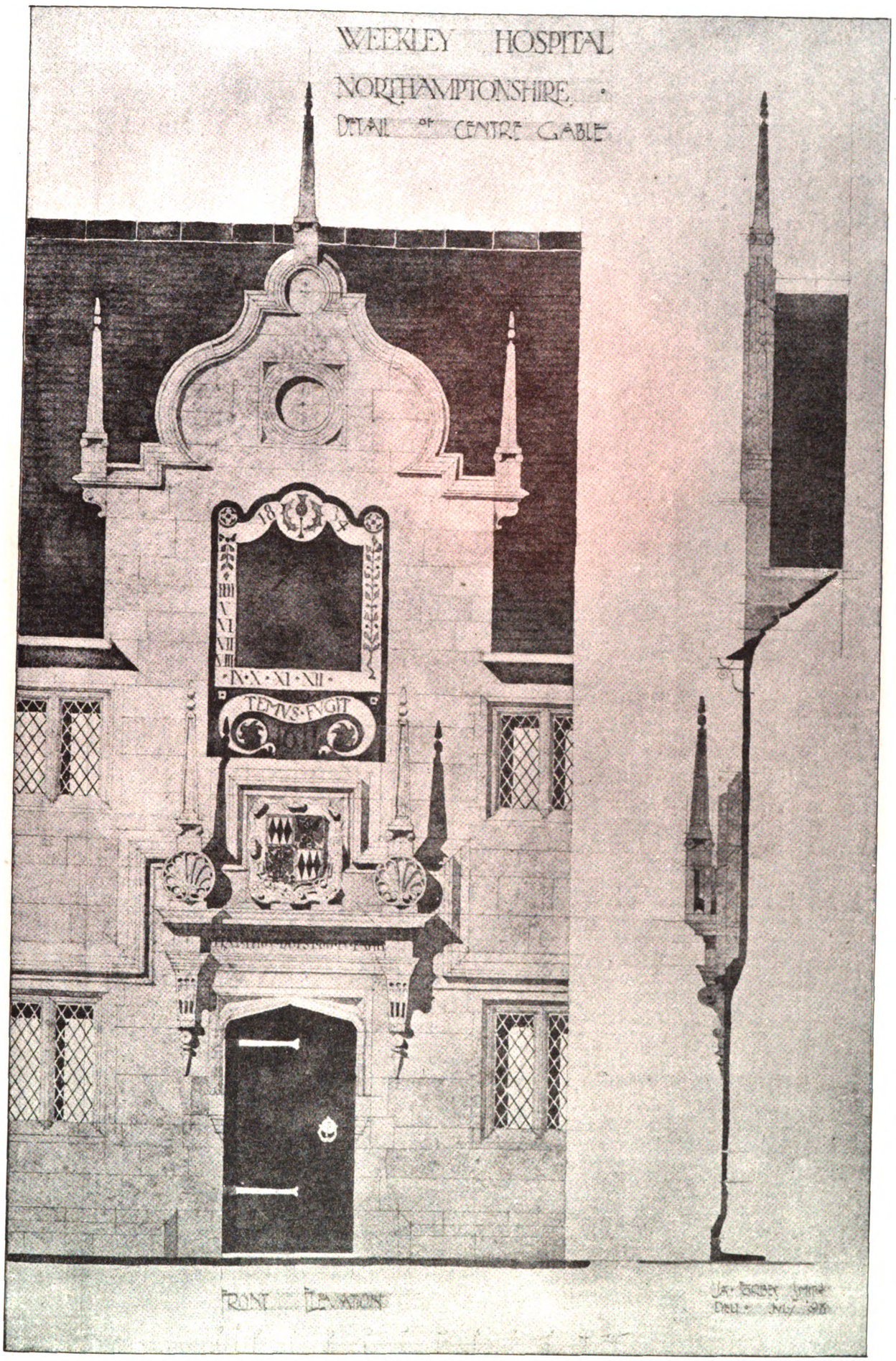

R.I.B.A. PUGIN STUDENTSHIP DRAWINGS. MEDAL OF MERIT AWARDED TO J.A.FORBES SMITH.

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Institute of Clayworkers. The chair will be taken by Mr. Thos. Blashill, F.R.I.B.A. Anyone desirous of attending this meeting may obtain admission to the hall upon application to 43, Essex Street, W.C.

A party of Germans numbering 50 engaged in the building industries will pay a 10-days' visit to England for the purpose of seeing the exhibition. They will be entertained at a banquet at the hall by the Institute of Clayworkers on the evening of Thursday, the 25th inst.

THE LARGER SUBURBAN HOUSE.*

By H. D. SEARLES-WOOD.

I PROPOSE to deal with houses of rental value of from £80 to £200, Mr. Appelbee having kindly undertaken to treat on houses of the terrace and small semi-detached types.

There is one catch phrase current which it seems impossible to keep out of any conversation at the present time, I mean the reference to the man in the street, well, I take it that the majority of him live in either one or other of these various types of house.

One of the peculiarities of the suburban tenant is that he seems to wear the neighbourhood out in the first term of the tenancy, and it thus happens that the oldest inhabitant in most suburbs has been in occupation about seven years. Now, this being the case, it is obvious that in planning these houses they must be designed to suit the multitude, and not individual tastes.

The man in the street is a man of social habits, with a fairly large circle of acquaintances. Let us take a typical family, consisting of the father and mother, with a grown-up family of four, two boys and two girls. The father and two boys playing golf and billiards, the mother and girls devoted to cards. Now, what should be the proportion of the various rooms to suit such a family, supposing we fix the rent at £200, and give an acre and a-half of ground at £25 per acre per annum. This leaves in round figures £3,000 on a 5 per cent. basis as the cost of the house. The relative size of the several reception-rooms is the first consideration. The views of the man in the street and his wife are apt to differ in regard to which should be the larger, the drawing-room or the dining-room. I get over this difficulty sometimes by making the drawing-room, dining-room, and billiard-room all the same size, and it makes a very satisfactory house, but I find it better to give the advantage to the drawing-room as being the room in which most of the social functions take place, and the general living-room. I know it is difficult to convince the mere man that this is the case. Pipes and the old clothes dear to the heart of every man lose some of their flavour or comfort in the surroundings of the drawing-room, and hence, as I say, the mere man is apt to rebel at the drawing-room being larger than the dining-room, but my experience is that in the inevitable compromise the drawing-room comes out the larger room. In houses of this kind I find that the luxury of a large hall cannot be afforded; it is a beautiful feature in large houses, but where it can only be obtained by the sacrifice of size in the dining-room and drawing-room, I am convinced it does not pay. (I generally lay a parquet floor in the drawing-room, though nowadays dances are generally given in the various public halls that are found in most suburban districts.) I had some few years ago to advise trustees as to advancing their money to build a small house for a young couple who were just married, who thought they would like a quaint little house built out of the wife's trust money. When the plans were submitted to me I reported that in the event of the house being to let considerable additions would have to be made. I remember one of the features was a large entrance-hall, which was obtained by making the dining and drawing-room a combination. The drawing-room one end of the room, and the dining-room the other end. In spite of my advice the house was built and occupied by the young couple for, I think, about two years, and they then took an ordinary house in the country, and the quaint conceit remaining empty for over a year, and was then let to a tenant who insisted on the trustees adding another wing with a dining-room and some other accommodations that by no stretch of the imagination could be considered quaint. This incident has often occurred to me when I have seen similar designs in the professional papers, and I wonder what alterations will be made in the course of time, and such thoughts as these have a chastening influence whenever I I feel disposed to attempt the unusual. I hope I shall not be misunderstood. I have a great admiration for the work of many of our talented architects whose houses will always interest, but small suburban houses must to a certain extent follow the more or less stereotyped plan which, after all, is the concentrated experience of many generations of builders.

I personally have a great objection to that form of hall which consists of a passage from the front to the back of the house. It quite, to my mind, destroys the comfort of the hall, and in small houses I think what is called the garden entrance is unnecessary. I like also, if possible, to shut off the staircase from the hall.

The position of the billiard-room in relation to the house wants careful consideration. I always try and make a separate approach to the billiard-room from the outside. In the suburbs it is usual to have certain evenings in the week for billiards, when it is understood that your friends will drop in without a special invitation for a friendly game, or to play in a handicap. If there is a separate entrance these visitors can come into the room without disturbing the other members of the family, and can leave without rousing the household if the billiard-room is kept open late. It always seems to me that a billiard-room in a small house, such as we are now considering, is an expensive feature, if you look at it in the light of the largest reception-room in the house being devoted to a game which, on the average, is not played for more than four hours a week. To obviate this, I have found Burnett's patent machinery for lowering the table into a pit, and allowing a floor to be laid over the space, makes this room available for other purposes of entertainment. This machine consists of four screws which work in a steel frame, and are connected by means of bevel cogs so as to all work together, and thus prevent the travelling table jambing; the screws bring the table up to the steel bed-plate, and the table comes up each time to a dead level. When the table is lowered a beam of oak is laid across the opening, and the flooring, made in convenient widths, is laid down on the beam, and the ends caught by a hinged board secured with cups and screws, which hold the false floor in its place. It takes about 20 minutes to get the table down and the false floor laid, and about 30 minutes to get the table back again and the false floor stowed away in the pit.

I find it suits the man in the street to give him a dining-room, drawing-room, and billiard room, the last taking the place of the small sitting-room usually called the morning-room or library, on the ground floor. The billiard-room in this case has usually a writing-desk in it, where the men of the family do what writing they have to do, and, in fact, use it as a general morning-room. This room should always be heated by hot-water pipes. Nothing is more miserable than to go into a cold billiard-room after dinner, and the open fire is apt to make one set of cushions softer than the others. If this plan is adopted the ladies want a room upstairs for work, and this can often conveniently be made in the attic, and when so placed piano or violin practice can be indulged in without stint for fear of the feelings of the rest of the household.

The relative position of the kitchen to the dining-room is another point which regulates the plan to a great extent so as to avoid as much as possible having to cross the house in serving the meals; but it is a moot point whether, in the sized dining-rooms that are usual in the class of house under consideration, two doors—one from the hall and one from the service passage—are not more conducive to draught than the convenience of the service warrants. But I am not in favour of hatches. The dining-room should never be less than 15 ft. for the convenience of serving round the table. A recessed fireplace on the side is also a pleasant feature, and gives interest to the room.

The kitchen should be so placed that the housemaid's pantry can be reached without passing through the kitchen. This pantry should be as large as possible, and

* A paper read before the Architectural Association on the 29th ult.

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all the glass and silver should be washed and cleaned in it. The kitchen should also be a good size. It should be remembered that, in addition to the work of preparing the food, it is the living-room of the servants. It is not usual, in houses of the size we are considering, to provide a servants' hall, and therefore the kitchen should be made larger to suit the double purpose. Good light on the right-hand of the range is very important, and a cheerful outlook, if possible. In these houses I always make the boilers in the ranges of the kitchen and scullery both work the hot-water system, so that when in the summer the cooking is done on the smaller range, there is still a circulation of hot water over the house. I find it a good plan also to have a copper cylinder on the floor on the first floor as well as the hot tank in the cistern room. This cylinder heats the linen-closet and gives a good storage of hot water.

If the family are given to taking cold baths in the morning there is a great run on the bathroom, and I find that a second bathroom is a good feature, if possible; but if not, a spray bath on the head of the slipper bath enables the bath to be used much more quickly.

The staircase is one of the few opportunities in a house of this character that offer scope for a little careful detail. Of the three types of stairs—the open well, the dog leg, and the stairs between walls—I fancy the last gives a little more mystery to the planning, the upper floor not being disclosed until the half space is turned. A second staircase is a good feature, if it can be arranged.

For the family we are planning for, eight bedrooms, a dressing-room and a workroom at least are needed.

As a comparison, taking the area of the rooms on the ground floor as 100, the following is the proportion of the plan marked A.:—

Billiard-room	24	Bedroom ...	12
Drawing „	19	„ ...	7
Dining „	15	„ ...	16
Hall	11	„ ...	15
Kitchen	9	„ ...	9
Scullery	5	„ ...	9
Staircase...	4	„ ...	5
Housemaid's pantry, cup-boards, water-closet, and lobby ...	13	„ ...	9
	100		82

We have been considering a plan for a house of the rental value of £200. Now let us see what reductions are required for one of £80. We will take the ground as a third of an acre. This would represent a plot 60 ft. by 240 ft. and the ground rent would be £13 10s. This leaves on a 5 per cent. basis, £1,300 for the house.

I make the dining-room 16 ft. by 16 ft., with a large bay, the drawing-room 16 ft. by 15 ft., with folding doors nto the hall, which is arranged so as to be used as a morning-room, or in conjunction with the drawing-room. The vestibule is approached through the housemaid's pantry, thus allowing the servant to answer the door without passing through the hall. The housemaid's pantry is arranged with a large gas-stove, so as to make it a summer kitchen. The kitchen is a fair size, with a scullery as a place for dish-washing only.

On the first floor are four bedrooms, corresponding in area to the four rooms on the ground floor, the bathroom and water-closet being over the vestibule. In the attic are two bedrooms, dressing-room, linen-closet, and cistern-room. I think it is very important, from a sanitary point of view, to put the cistern in such a position that it can be readily and easily examined.

Making the same comparison as before, the areas:—

Dining-room	30
Drawing-room	28
Hall	10
Staircase	6
Kitchen	13
Scullery	4
Housemaid's pantry	6
Lavatory	3
	100

This house, with reduced area, still gives good accommodation for reasonable social usages, and in both you will see the endeavour has been to work out the plans with the minimum amount of passage-ways. I think that this has been overdone myself, and both plans would be improved by more space in the staircases; but this would have been at the expense of the rooms.

In giving the percentage areas I have been endeavouring to arrive at the just proportion between the various rooms in houses such as we have under consideration. It appears to me that it would be a useful table if we could arrange some such scale. The problem appears to me to be as follows:—Given the rental value of the house and no conditions as to the size of particular rooms being imposed, what has been found to be the relative area of each room as the result of experience? Of course, having fixed the areas for the ground floor, the other floors must follow more or less these dimensions. The comparison also depends on the houses compared being equally well built.

I have now described two plans at either end of my scale. The intermediate plans show a gradual increase in the scale of accommodation, and you will find that as you rise from the lower to the higher rent the tenants become much more exigent. The question, I think, that would be most profitable to discuss is whether modern planning is abreast with the spirit of the age. Most buildings designed for particular purposes nowadays are highly specialised. Do our domestic buildings compare successfully with these specialised buildings in suiting the requirements of the persons occupying them, or are they governed by considerations other than the needs of the tenants, such as the reproduction of old buildings whose appropriateness to modern usage is rather open to question?

SOME NOTES ON BELLS.*

By A. A. JOHNSTON.

THERE would appear to be a halo of romance surrounding bells and their origin which would render almost anything one might say on the subject interesting. The industry of bell founding is, without doubt, a very ancient one. I venture to suggest that the cymbals of old were, in reality, bells cast in a flat form, instead of the one we are accustomed to. Even at the present time there exist, in this country, bells cast in the year 1300. A bell, it seems to me, gives wonderful value for money. I do not know of any other article that is as good as new after 600 years' wear, and even if a bell becomes cracked it is still worth two-thirds its original value, since it can be broken up and recast, the metal itself being the chief cost. The value of a clock lies in the labour of making it, the value of a bell is principally in its material. All bells are, or should be, made of the same alloy. This is about four parts of copper to one of tin. No other metal than this is used. If you attempt to vary that rule or depart from it you will be unsuccessful.

Bells, in order to be musical and tuneful, need not necessarily be large and costly. These eight bells only weigh 10 cwt. altogether. They are not suitable for public buildings or towers of any size, but I should have no hesitation in putting them up at private residences, where the punctuation of time is all that is desired, or in public parks.

In this connection I may say, however, that ridiculously small bells have been put up from time to time by foreign firms in this country, notably at Aberdeen and Boston, and in both instances have been attended by failure. At Aberdeen, the smallest bell weighs only 37 lbs., and this in a lofty tower with thick walls, and surrounded by busy traffic! Out of a peal of 36 bells, 24 are absolutely useless, and have been the cause of much heart-burnings, and controversy during the past decade. £3,000 worth of bells lying idle (or where, when I was last there) is a source of real trouble in the Granite City, which has been turned into a city of woe, so far as its campanology is concerned, and very wrath with those who led it into such an unfortunate outlay. After this I do not think we shall see many more foreign peals erected in this country, especially as the makers charge twice as much as English founders.

* From a paper read before the Society of Arts on "Clocks, Carillons, and Bells," on the 27th of March.

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Next to the alloy of the bell, its diameter, shape, and mould require close attention. First of all, we start with the theory confirmed by practice, that a bell of a given weight must also be of a given diameter and thickness. For example—a ton bell should be 4 ft. diameter at the mouth, and 3½ in. thick at the sound bow, whilst a 1 cwt. bell should be 18 in. diameter, and 1¼ in. thick. There is no getting away from this rule, if you wish your casting to turn out a success. The same principle applies to all bells of various sizes. The heavier the bell, the larger and thicker it becomes, the lighter, the smaller and thinner. No bell can be of a pleasant sound, unless its thickness varies. A bell is thickest at the sound bow where it is struck, then it tapers upwards to one-third of this thickness. If a bell were of a uniform thickness right through, it would sound dull and dead, and be bereft of that timbre and resonance which is desirable.

Another point to be guarded against in the casting of bells, is "spongyness." This arises from two causes, viz.:—the mould not being dry, or the metal not being hot enough. Spongyness (that is, small holes in the bell), is an element of weakness, as when a bell becomes cracked it is often found when broken up that this has been the cause.

When a bell becomes cracked through the wear and tear of centuries, it can be re-cast into a new one at a comparatively small expense, as it is the metal which is the principal factor in its original cost.

When old bells are re-cast, it is usual to take a rubbing of any inscription on them and reproduce it on the new bell. There is a general belief that old bells contain a quantity of silver. If they do, I am sorry to say none of them ever came our way. In breaking up old bells we have invariably found what we ourselves use at the present day, copper and tin, and in much the same proportions.

I will now explain briefly the method of bell casting. We take the mould which has previously been built up on an iron plate and lower it into a pit already dug in the ground, of a sufficient height to envelop the bell. This mould is called the "core," and has been built up of bricks and loam and dried hard in an oven. The "core" being now placed below the level of the base of the furnace, the case, which has been built up and baked in a similar manner, is then placed over it like a glove, but leaving a vacuum space between the two, of the prescribed thickness of the bell.

Any inscription to be cast on has already been impressed on the loam of the case, so as to form part of the metal when run. The alloy having previously been mixed in the proportions already referred to, and being now reduced to liquefaction as the result of being in the furnace some hours, the furnace is tapped, the molten metal, finding an outlet, rushes down an inclined conduit into the crown of the mould, and in a very few minutes the vacuum is filled, and the whole—core, case, and bell—are allowed to remain in the ground for a day or two to cool. A 5 cwt. bell could be dug out the next day. A ton bell would remain too hot to touch for two or three days. The process of casting is but the consumation of days and weeks of preparation It takes five minutes to run about £1,000 worth of bell-metal.

The tuning of a peal of bells is a delicate business. So long as bells are used singly it does not matter much what note they turn out, but where bells are required to act in concert with each other, then the question of tuning them to harmonise has to be taken into account. In the process of tuning the bell is fixed mouth-upwards and held firmly in the grip of powerful vices. Having taken a plumb of the centre, we adjust our steel cutter to the sound bow of the bell, and proceed to pare off the metal at its thickest part. This is how a sharp bell is flattened in tone, and it can be done without detriment to the bell up to half or even three-quarters of a note. If you keep on turning it out the bell would become thin and "panny" in sound.

To sharpen a flat bell is not so easy, indeed we seldom attempt it, preferring rather to take the bell into stock or even to recast it than to waste time over what generally results in failure. There is a theory extant that a flat bell can be sharpened by reducing its diameter. I believe the note of a flat bell can be slightly sharpened in this way, but we have also found that the application of this principle prejudicially affects the tone of the bell—hence we generally contrive to cast our bells sharp so that they can be easily flattened, if necessary, to the required note. Sometimes they come out exactly right, and that is the best form of "tuning."

The same bells may be used in a variety of ways. They may be (1) rung in peal by a band of ringers; and also (2) chimed upon externally by a clock; and (3) chimed upon by a carillon machine; and lastly (4) struck by a hammer pulled by hand. Each bell may thus be requisitioned in four distinct ways, neither method interfering with the others. It is not, of course, possible to put these various practices into use simultaneously.

When a bell gets worn in one place through the tongue striking there for generations, it becomes weak in that particular spot and runs the risk of cracking in consequence. What should then be done is to quarter turn it round in its pit so that a fresh substance is presented to the clapper as the bell swings. In determining the weight of bells to be erected in a given building, attention should be paid to internal measurement of tower, thickness of walls, elevation of belfry, and conditions of traffic. Bells should be proportionate to the tower; large bells for large towers, small ones for small towers. Another not unimportant factor in deciding as to the calibre of bells is the question of funds at disposal. We are sometimes requested to provide a 1 cwt. bell of a rich mellow tone. Unfortunately it cannot be done; there is not enough financial inducement to make it rich, although there is no reason why it should not be a clear, full tone and pleasant to the ear.

The last specimen I have to present to you is a hemispherical bell. Some call them cup bells! It is of the same composition as the others, but different in shape, and of an almost uniform thickness. It is not a species of bell we recommend, and you will probably confirm this when you hear it. The only point in favour of hemispherical bells is their deeper tone, as they are so much thinner, but they have no clear defined note, the same as an ordinary bell, and for this reason we do not advise their adoption.

In replying upon the discussion at the close of his paper, Mr. Johnston referring to the question of louvres remarked that unless they were made at a certain angle and overlapped wet got in. He should recommend architects to have no louvres at all, because the more bells were washed the better they liked it, wet doing them no harm. If good full-toned bells were required no louvres should be put in. Bells peeping out of a turret were certainly an adornment. If louvres were put in they must be made at a certain angle in order to throw the sound down in the direction required.

THE GILBERTINE PRIORY OF WATTON.

THE Gilbertine Priory of Watton, in the East Riding of Yorkshire, was the subject of a paper and subsequent discussion at the meeting of the Royal Archæological Society last week. The author was Mr. W. H. St. John Hope, who, together with the Rev. Dr. Cox, and with the entire concurrence of Mr. William Bethell, the owner, and Mr. Richard Beckitt, the tenant of the "Abbey," as it is now called, has carried on a work of research necesitating extensive excavations during the last eight years. Some account of the rich reward which attended this work has already appeared, but not in so complete and interesting a form as it was presented to last week's meeting of archæologists.

There is ground for believing, remarks a writer in the *Yorkshire Post*, that on this spot—which is at the foot of the Wolds, eight miles north of Beverley—a nunnery existed as early as 686, and Beada speaks of a miracle wrought by St. John of Beverley after he became Bishop of York on a visit to this spot. But if the nunnery ever existed so early, it is evident it had ceased to exist at the time of the Norman Conquest, as there is no mention of it in Doomsday Book, though Watton is there said to be possessed of a priest and a church. The Gilbertine Priory of Watton is said to have been founded about 1150 by Eustace Fitzjohn, and there is documentary evidence that he, with Agnes, his second wife, gave "to the nuns which served God at Watton" the Vill of Watton itself,

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and some other possessions. The Priory was surrendered in December, 1539, by Robert Holgate, Bishop of Llandaff, the commentator, Thomas Webster, the sub-prior, Joan Warcoppe, the prioress, and others connected with the house.

The Priory of Watton belonged to the Order of Sempringham, founded about 1139 by Gilbert, Rector of Sempringham, owing to the desire of seven maidens who lived in the parish to lead a strictly religious life. A building was erected for them adjoining the parish church, and several others were afterwards erected in the neighbourhood. Of the manner of life that was lived in the monastery and nunnery at Watton, Mr. St. John Hope gave a most interesting description in his paper. The nuns were strictly secluded, even receiving the holy water through tiny windows, so small that they could obtain but little view of what was going on outside. The early statutes show that the brethren were not to exceed 70, nor the nuns and sisters 140, this being the largest house in connection with the Sempringham Order. A large church was connected with the nunnery, but it had separate accommodation for both sexes.

The great value of Mr. St. John Hope's investigations is that he has shown for the first time many of the arrangements of a Gilbertine monastery of which practically nothing was known until quite recently. It is true that many of the buildings uncovered were little more than foundations, the chalk of which the walls were chiefly constructed having been burnt for lime, but Mr. Hope has nevertheless been able to draw out an elaborate plan of the original buildings, and historic references which have since been discovered have shown the correctness of a good many of his conclusions. The details are full of technicalities, and the student must be referred to the forthcoming number of the Journal of the Archæological Society, where they will be set out with much fulness. It was made evident by an excellent series of photographs that far more of an interesting character remains to interest the visitor to Watton than is generally supposed.

TRADE NOTES.

MESSRS. COUSLAND & MACKAY, ventilating engineers, 150, Hope Street, Glasgow, are carrying out the ventilation of new stables, which are being erected by the Corporation of Paisley at Underwood, by means of Mackay's patent direct-acting Louvre ventilators. They are also carrying out the ventilation of the St. Charles R. C. School, Kelvinside Gardens, Glasgow, on the same plan.

MESSRS. WM. POTTS & SONS, church and turret clock manufacturers, Guildford Street, Leeds, have received instructions to erect a new clock to strike the hours and show the time upon four external illuminated dials at the Annan Town Hall, for the Corporation. Messrs. Potts have also in hand a striking clock with illuminated dial for Fort William, Scotland, and a new illuminated hour striking clock for Etherley Church, co. Durham, together with a clock for America for one of the large public companies.

A FOUR-LIGHT memorial window was recently erected in the South aisle of the parish church, Bradley, Staffordshire, to the late W. W. Chettle. The subjects on the lights consisted of four single figures, Our Lord as the "Good Shepherd," and "True Vine," Saints Paul and John. While in the three quatrefoils of the tracery were Our Lord blessing Little Children, and ministering angels in the act of singing. The whole was designed and executed by Mr. T. W. Camm, at his studio, Smethwick, near Birmingham.

JOTTINGS.

NOS. 1 & 2, LINCOLN'S-INN-FIELDS have been disposed of by Messrs. Farebrother, Ellis & Co. for £19,000.

THE Fire Brigade Committee of the Bradford Corporation have decided to apply for borrowing powers for £28,000 for the erection of three new fire stations at Tong, Eccleshill, and Low Moor.

THE annual report of the Halifax Corporation Fire Brigade gives the approximate damage to property at fires in the borough within the year at £30,833, an increase of £15,962 compared with the previous year.

THE restoration of Bawtry Church is now approaching completion. The work has been carried out under the superintendence of Mr. C. Hodgson Fowler, F.S.A. Some £300 is still required to complete the scheme.

MR. LUKE FILDES, R.A., has been commanded by the King to paint a full-length portrait of His Majesty. This picture will be representative of His Majesty in his robes, and will be the official portrait of the King.

THE Hull Technical Instruction Committee have adopted the recommendation of the Art Sub-Committee to purchase a site in Baker Street for a new municipal art school. The site contains 903 square yards, and the price is 4,000.

A SPECIAL sub-committee of the Leigh Town Council have decided to recommend the Council to purchase for £18,000 the twenty-three acres of land belonging to the Walmsley estate between the railway and Back Glebe-street, Leigh, for a public park and recreation ground.

MR. J. H. DENNIS, of Liverpool, who has promised £13 000 to build the central tower of Truro Cathedral, as a memorial of Queen Victoria, has offered, at a cost of £8,000, a peal of bells and a set of chimes, and an organ to the old Collegiate Church of St. Buryan, West Cornwall, of which the Rev. R. J. Martyn, his brother-in-law, is rector.

MRS. ARCHIBALD FORBES, widow of the famous war correspondent, is placing a granite monument over his remains at Aberdeen. Mrs. Forbes also states her intention of placing a bronze tablet, with portrait, in King's College Chapel, Aberdeen University, where he was educated, and of bequeathing to that institution a replica of Professor Herkomer's portrait of her husband.

THE St. Bride's Press, Limited, 24, Bride Lane, Fleet Street, London, E.C., are about to publish a work on "Quantities," by J. Bartlett, M.S.A., member of the council of the Society of Architects. Vol. I. (ready April 15th) deals with quantities as applied to road-making and sewer construction, and should prove extremely useful to surveyors, municipal and consulting engineers, contractors and others. It will be on sale at 10s. nett.

A NEW County Asylum for Middlesex is being erected just outside St. Albans, at Napsbury. The site of the new building is 440 acres in extent, and was purchased at a cost of £45,000. The new buildings have been designed by Mr. Rowland Plumbe, F.R.I.B.A., and are arranged on the pavilion system to accommodate 1,150 patients, 100 of whom are to be housed in a separate building, which is to be used only by paying patients. A hospital to accommodate 234 persons is included. The estimated cost of the buildings alone is £358,100, or £311 per patient.

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The British Architect.

LONDON: FRIDAY, APRIL 19, 1901.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.—Examinations will be held on the following dates:—

The Preliminary Examination on the 11th and 12th June, 1901. Applications must be sent in on or before the 4th May.

The Intermediate Examination on the 11th, 12th, 13th and 14th June, 1901. Applications must be sent in on or before the 4th May.

The Final and Special Examinations from the 21st to 28th June, 1901. Applications must be sent in on or before 24th May, 1901.

The Testimonies of Study, &c., with the necessary fees, must accompany the applications, all of which are to be addressed to the undersigned.

W. J. LOCKE,
Secretary R.I.B.A.

No. 9, Conduit Street, London, W.

AN APOLOGY FOR THE VICTORIA MEMORIAL COMMITTEE.

IN our last issue we referred to the qualified approval which had been bestowed upon the action of the Executive Committee for the Queen Victoria Memorial by the *Times*, pointing out what we considered to be the chief points of weakness in our contemporary's arguments against the adoption of an open competition. Since then the *Daily Telegraph* has taken up the running, and in some sort following the *Times* lead has constructed what can only be regarded as a meek and mild apology for the Executive Committee's curious decision. Between the arguments of the *Times* and the apologia of the *Telegraph* there is little indeed to choose. Both are equally inconclusive, and beside the mark, as regards the main issue. The only difference, perhaps, is that the *Telegraph* lets in a little more light upon the committee's reasons for their decision, though this is, after all, a somewhat doubtful advantage—for the committee.

The chief point in the apology appears to be that the committee were influenced in their decision by the assumption that if an open competition were arranged for, there would be a likelihood of the best men refraining from entering the lists. "The best known men," remarks the *Telegraph*, "are always the busiest men, and they have no time to devote to what may be termed speculative work. The result of open competition would probably be the presentation of designs by younger and lesser-known sculptors, which might or might not yield what is wanted." As we have already pointed out, this sort of talk is not sound argument, for such a competition could have been so arranged that the best-known and busiest men should not have had their time thrown away upon a purely speculative business. Certainly one does not expect an architect who possibly has a large and lucrative practice to be willing to take part in an open competition simply as a matter of business speculation. But sometimes even a busy architect is influenced by other than merely mercenary considerations in the undertaking of work. We have even heard of an architect taking up a job simply because it was interesting! Of course the imagination of the *Telegraph* writer scarcely compasses such an order of things as that. It cannot well get beyond the commercial idea as comprehended in the significant term "the best known and the busiest." Yet we are confident that these same best known and busiest men would even have dared a competition if arranged on right lines—not because they desired more work or more pelf, but because the work might be an interest and a delight to them in the doing. This may seem strange to the commercial intelligence of the average business mind, but it is none the less true.

But who are these best known and busiest men that the *Telegraph* talks about? Are the five selected architects to be regarded as the only such in regard to their profession? Are there no others that might be reasonably included in the term best known? The *Telegraph* writer wisely omits any reference to the names that might easily have been added to the selected list, and to which not even the best known and busiest of the five could have taken exception. He is content to call the selected five "distinguished architects," and to ignore the fact that out of the thousands of other practising architects in the British Isles there might happen to be another or two who might also be reasonably included in that category.

Another reason advanced by the *Telegraph* is that the Government have now abandoned the principle of open competition. This proves nothing unless it be that their recent essays in regard to obtaining designs for public buildings have not been an overwhelming success. It is a wonder the writer did not instance the County Council limited competition for the new Strand frontages as a reason in favour of the committee's decision. But, perhaps, he did not wish to overwhelm us with strong argument! We need follow the *Telegraph* apology no further. The writer's fear that if there were an open competition there would be no architects left to act as adjudicators, is about on a par with his assertion that the class of work in view may be described as half architecture and half landscape gardening!

THE IMPERIAL THEATRE, ST. JAMES'S PARK.

(See Illustrations.)

EACH new theatre we get suggests an effort on the part of its designer to profit by experience, and to make an ever-increasing bid for the popular favour. But Mrs. Langtry's charming new theatre, to-day completed for the benefit of London playgoers, makes a bold and striking bid for attention, even in this age of great departures in artistic effort.

To begin with, it is on plan a determined attempt to have no really bad seats, and there is no seat from which a good part of the stage floor is cut off from view! Side seats and boxes are practically dispensed with, and the whole of the house has an effect, viewed from the stage, of being brought into good relation with the players. By a clever system of cantilever construction the two circles are made more open and unrestricted in view and airspace than has seldom, if ever, been possible. The gallery, instead of being relegated to a high circle of its own, forms a backward continuation of the upper circle, and has the effect of an *atrium*, or outer court to the house proper, as one sees it from the stage. Then, by a mezzanine floor under each circle, an admirably improved system of inter-communication is possible. A feature of the plan is the substitution of two Royal boxes, one on each side of the house, of very ample proportions, instead of the usual tiers of small (and often empty) boxes. Each section of the house has independent foyer accommodation; in the stalls and balcony this is in addition to the buffet.

The architectural treatment of the interior is of the French First Empire period, and is really architectural to a degree almost unknown in theatre design. Moreover, the walls are lined throughout with marble; so, in this theatre, the usual happy huntin gground for the plasterer and upholsterer is somewhat restricted. Every side of the house is treated as part of a consistent whole, and the awkward junctions of proscenium and side walls, and of these latter with the ceiling and back of the house, are entirely avoided. The proscenium opening is framed in, like the front of a temple, with coupled columns and pilasters of Cipolini marble, on a high pedestal of Pavonazza, supporting a pediment of statuary marble, within which is the wreath and eagle symbolical of the Empire.

In decorative effect the admirable colour and refinement of the house are very striking. The prevailing colours are white, green, mauve, and yellow. The general wall surface is formed by a veneer of Pavonazza marble, relieved by Sienna pilasters, the effect of which is excellent. All the marbles have been specially brought over by Messrs. Farmer & Brindley from their own quarries in Italy, and near Carystos, in Greece. The marble is decorated by an appliqué of burnished metal enrichments. Charming features in the decoration are the very fine pieces of silk draperies hung over the circle and box fronts, and on the wall surfaces behind the various ranges of seats and the magnificent drop curtain, all of them bail-

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ing from the Royal College of Needlework, and following the architect's careful design. The carpets throughout are of a beautiful green, decorated with Imperial crowns, and the upholstery of the reserved seating is in a buttercup yellow, which lights up admirably. The drapery over the front of the Royal boxes is of green silk, richly embroidered with gold. The curtains to the boxes are of buttercup yellow silk, with white powderings of fleur-de-lys. The curtains, hangings, and embroideries have all been designed by Mr. Verity, and executed by the Royal School of Art Needlework under his supervision.

No decorative painting or gilding of any description will be found in any part of the auditorium. There is no painted act drop and there are no tableaux curtains. Instead we find an adaptation of the old-fashioned drop curtain in rich green velvet, which hangs in festoons with a deep valance of fine embroideries of sphinxes, etc. The ceiling of the house is refined and simple, and is centered by the glazing from concealed lighting through amber glass. The gallery ceiling which goes, of course, higher than the other, is formed by a valarium, and this part of the house is treated as an atrium or forecourt to the rest. The modelled plaster work in the auditorium and the metal enrichments have been admirably executed by Messrs. George Jackson & Sons, a visit to whose interesting workshops formed one of the pleasantest parts of our note-taking on the Imperial Theatre. The foyers are very effectively and daintily decorated by arabesques in two tones, green on white, or black on white.

The steel construction is somewhat remarkable, and certainly uncommon, and is the outcome of Mr. Verity's design to have a clear and unobstructed view for his audience. The whole construction of the galleries and roof is bound together around a central framework of upright stanchions at the back of the pit. It thus forms one connected frame of steel of great rigidity. An immense girder 53 ft. long and 3 ft. 6 in. deep, and weighing seven tons, crosses the house under the dress circle, and this carries the wing girders 26 ft. long, and an intermediate centre girder, the whole forming a frame of horse-shoe shape, carrying 23 raking cantilevers 3 ft. apart, which all take the concrete filling. These cantilevers pass through the stanchions before named, and are built into the walls and tailed down. The back framework of 14 stanchions are continued up to the gallery, composed of two channel irons, with gusset plates between to give rigidity. These stanchions carry the dress circle cantilevers at some 19 ft. up from their bases, and they are braced by a system of light steel joisting. The amphitheatre is constructed of an entirely new system of radiating cantilever brackets, the 14 centre ones being carried by the stanchions, and four additional ones on each side of the house being carried on the double side walls; these brackets are constructed with channels back to back, and large gusset plates and tailing down plates between them; they project 15 ft. from the stanchions, and so constructed as to carry a corridor through them under the front part of the gallery from one side of the building to the other.

That Englishmen are not necessarily behind their American cousins in this sort of work would appear from the fact that Messrs. Moreland & Son began this on January 2nd, 1901, and manufactured and entirely erected it by February 16th, 1901. It was thus carried out in forty-one days, and by one gang of men only, with no night work. It is a good tribute to the energy and efficiency of this firm.

The lighting of the theatre is by electricity. The chief source of light in the auditorium is from lamps fixed behind sheets of amber-tinted glass in the ceiling, producing an effect of warm sunshine. Electric torches are fixed round the tier fronts, and hanging lights of classic design are suspended from the marble walls, as indicated in our illustration. The whole of the electric lighting, both for the stage and the front of the house, was carried out by Messrs. Vaughan & Brown, Ltd., who also supplied the gas braziers, fire hydrants, wrought iron and glass ceiling for sunlight effect, arc lamps, fire-proof curtains, and outside fire-escape from flies. They also carried out the ventilation. The whole of the work executed by Messrs. Vaughan & Brown was carried out under the personal supervision of Mr. G. C. Vaughan, A.M.I.E.E. The large tableaux curtain was also fixed by the same firm.

Nothing remains but the walls and dressing rooms of the old theatre opened as the Aquarium theatre by Mr. Edgar Bruce in May, 1876, and renamed "The Imperial" in 1879, and it is now no longer an annexe of the Aquarium, but will be known as the Imperial Theatre, St. James's Park. A new roof, entirely new auditorium, new staircase and foyers, a new stage, and the latest system of electric lighting have created the transformation in three months and a half from the designs of Mr. Frank T. Verity, F.R.I.B.A., the architect, under the constant personal supervision of Mrs. Langtry. The theatre holds 1,150 persons (about the same as the Haymarket), the auditorium being 50 ft. under the stage, 40 ft. deep, and 65 ft. wide, with a proscenium opening of 30 ft. wide, and 25 ft. high. This latter proportion appears a great improvement on the huge proscenium opening to the usual stage.

The foregoing represent the principal and striking "points" of the new house, and we believe our professional readers who see the interior of this beautiful play-house will agree with us that Mr. Verity has achieved a unique and distinctive result of which he may well be proud. We confess to some doubt in anticipation of so very architectural an interior, but a sight of the finished effect discloses such genuine refinement and charm that one is inclined to think further departures from the beaten track of theatrical traditions will be encouraged thereby.

THE PREPARATION OF SPECIFICATIONS.

A VERY valuable book on this subject, and one which must become a standard work in relation thereto, has just been published by Mr. John Leaning, F.S.I. (London: B. T. Batsford). Mr. Leaning's qualifications for the work are too well known to require any setting forth by us. He has thoroughly mastered his subject in all its intricacy of detail, and in dealing with it, is clear, definite and concise. In his preface, Mr. Leaning states he has endeavoured to present in a connected form a reasonable order of the trades and items of a building specification, embodying items of work fairly consistent with each other. "The general specification," he says, "comprises a large proportion of the items which *every* building requires. In other sections of the book will be found examples of items which are required only in buildings for special purposes, such as churches, schools, warehouses, etc., and from these sections ordinary items have been excluded. In the section on preliminary considerations, the various expedients adopted by the capable architect in his specifications for the imitation of a building contract are described as far as possible."

The book is divided up into nine sections, as follows:—Section 1. Preliminary considerations; Section 2. The order of a Specification; Section 3. Complete Specification in all trades of a large house, with stables, conservatory, boundary walls, etc.; Section 4. General conditions of contract and comments thereon; Section 5. Clauses which apply to buildings and works of a special character; Section 6. Separate contracts for special materials; Section 7. Schedules of prices, tenders, contracts, &c.; Section 8. Notes on the various trades and special sections of the specifications; Section 9. Trade lists, &c.

In his preliminary considerations, Mr. Leaning gives some really excellent general advice as to the art of specification writing and setting out. He properly insists that, as a general rule, the less diffuse a specification is the clearer is its meaning, though this, of course, depends upon the amount of information afforded by the drawings. The author of a specification, says Mr. Leaning, must clearly understand what he is writing about, or he cannot properly describe it; he should say exactly what he means and no more. Though this is, of course, the nature of an axiom, it is far from being generally understood in a practical and common-sense way. The nature and value of a complete, clear, and definite specification is admirably illustrated in the most practical way by Mr. Leaning, who takes infinite pains to make everything he has to describe and explain thoroughly intelligible. Besides giving a specification of a house (with complete index), Mr. Leaning gives specifications of churches, schools, warehouses and manufactories, underground conveniences, shop fronts, public-houses, and cold

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storage. We have also chapters devoted to specifications for the heating of buildings, for electric light installation and fittings, for structural ironwork, and for roads and paths.

The notes on the various trades and sections are very full, and explain admirably all the technical detail relating to materials and construction. Mr. Leaning's suggestions as to the importance of a proper acquaintance with the relative value of the items described are very much to the point, especially where he recommends to the student of specifications the practice of preserving notes of all the prices with which he may have to deal. He would have the student not only keep a commonplace book for the arrangement of general professional information, but the student should have a book for each trade and enter every price that comes in his way in its respective book. "Every element which has affected the cost of work, all information obtainable as to the working of particular materials, relative values, weights and measures which are novel, etc.; and in every case date the item and state its derivation, as both source and date are important. This practice will, besides enriching his store of information, help the student to foster habits of observation and precision such as would be worth very much more trouble to acquire." In conclusion Mr. Leaning gives a chapter on trade lists, and also a short list of selected books on materials and construction. A good index is also furnished. The author has done his work admirably throughout, and the production of the book is well worthy of Mr. Batsford's reputation as a publisher.

NOTES ON CURRENT EVENTS.

THE Manchester Corporation have acted wisely in amending the conditions of their competition for new fire station, police station, and other buildings connected therewith. The most important initial amendment is that the two guineas deposit for the conditions and instructions is returned not only if a *bona fide* design is sent in, but also if the conditions, etc., are returned within a fortnight, which is a logical and sensible arrangement. A professional assessor is also promised. This is right, but it would have been better still to have named who this assessor was to be, so as to give confidence to men who might otherwise not care to risk entering the competition. The premiums of £300, £200, and £100 are generous enough, but there is no guarantee of the employment of the author of one or other of the premiated designs to carry out the work as architect. This, again, we consider to be a mistake. If, however, an architect is appointed he will be paid 5 per cent. commission on the amount of the accepted tender, "or the sum of £3,750, whichever is least," and if he be the author of one of the premiated designs, the premium is to merge in the commission. But there is consolation in the thought that the architect will not be called upon either to pay for the quantities, or the salary of the clerk of works! The total cost, exclusive of architect's commission, is not to exceed £75,000, and the design that cannot positively be executed strictly within the limit of this cost will be excluded from the competition.

RESPECTING the new University Buildings at Birmingham, and the selection of a design, the following appears in the *Birmingham Daily Post* of Wednesday last:—"The statement that in the opinion of the University Council the principle of selecting designs by competition could not be advantageously adopted in the case of the new University building has raised considerable feeling among some of the subscribers to the funds of the University, as well as the architects of Birmingham, inasmuch as it will entirely exclude the latter from the opportunity of testing their ability to produce a suitable design for the proposed buildings. It has, therefore, been decided to request the Chancellor of the University (Mr. Joseph Chamberlain) to receive a deputation of architects and subscribers, who will place before him reasons why he should use his influence to have the question reconsidered, in the hope that, by means of a carefully-conducted competition, the best available architectural talent may be brought to the front. A requisition to Mr. Chamberlain asking him to receive such a deputation is in course of preparation."

SOME little time ago a competition was instituted for some villas at Dudley. This has now been decided, we are informed, with the result that the £10 premium is divided between Mr. A. Ramsell, Dudley, and Mr. H. A. Reynolds, of Birmingham. Other competitors divide honours as follows:—Highly commended designs: Mr. A. Gammage, Dudley; Mr. H. Phibbs, Brierley Hill. Commended designs: Mr. Thomas Silver, Handsworth; Mr. Jordan Green, Handsworth; Messrs. Perry & Nightingale, Dudley; Mr. S. O. Pennington, Wolverhampton.

THE Royal Institute of British Architects approved at their meeting on Monday night last (Mr. E. A. Gruning, vice-president, in the chair) of a recommendation of the Council that Mr. William Emerson should be requested to allow himself to be nominated as President for the ensuing year of office. The meeting also sanctioned the proposed alterations to the Institute Form of Building Contract, subject to slight verbal amendment. Mr. Wm. Woodward gave notice that he would ask the Council to convene a Special General Meeting at the earliest possible date for the purpose of considering a Resolution urging that "the proposed National Memorial to Queen Victoria should be open to the competition of all British (including Colonial) architects, sculptors, and artists."

A GENERAL meeting of the Institute will be held on Monday evening next, when Mr. Francis Bond, M.A., will read a paper on "The Classifications of Romanesque and Gothic Architecture." The following is a synopsis of the paper:—*First Test:* VAULTING.—Problem: How to vault an aisled nave, while retaining clerestory, and providing abutment and shelter for the vault. 1. Retain columns and ceiling: S. Abbondio; Como. 2. Omit aisles; (*a*) Hall-church, with tunnel: Provence; (*b*) With domes and pendentives: Angoulême; (*c*) With spires: Loches. 3. Domes on squinches: Le Puy. 4. Arch and lintels: Syria. 5. Tunnel-vaults; (*a*) Set transversely: Tournus: (*b*) Longitudinally; (i.) On pier-arcade: St. Savin; (ii.) With upper aisle: Issoire; (iii.) With clerestory: two stories at Arles; three stories at Paray. 6. Groined vaults: Speyer. 7. Ribbed vaults: Durham. *Second Test:* PLAN.—1. Apse. 2. Three parallel eastern apses. 3. Chevet. *Third Test:* CENTRAL TOWER.—1. Vaulted or not. 2. Octagonal or square. *Fourth Test:* TOWER GROUPS.—1. Numerous. 2. Triplets: (*a*) Burgundy; (*b*) Normandy. 3. Two: Auvergne. 4. Campanile. 5. "Pomme de pin," etc. *Classification obtained.*—1. Poitou. 2. Provence. 3. Auvergne. 4. Burgundy. 3. Normandy. 6. Périgueux. 7. German. 8. Lombardic. *English Romanesque:* A mixed school.

IT is curious how often clergymen are reported to be saying offensive things. The rector of a South London parish is reported to have said he knew well one of the five architects selected to compete for the Victoria Memorial, and "his position in the architectural world had been gained by his very successful designs for suburban villas." We suppose we must take it that this refers to Mr. Ernest George. To describe an architect thus, who has built some of the most delightful country houses in the world, is a most unfair and ignorant view. But anyone who knows Mr. George *well* could not obviously say such a thing.

MR. J. T. MICKLETHWAITE, F.S.A., the surveyor to Westminster Abbey, thus explains an accident which occurred in the Abbey a few days ago, and which has given rise to some rather exaggerated reports of the occurrence:—"About three weeks ago a marble shaft, rather less than 4 in. in diameter, fell from one of the windows, through the giving way of an iron pin which had held it in its place for six centuries and a half, and in its fall it did some mischief to a neighbouring monument. The failure is a curious one from a mechanical point of view, but it does not in any way affect the stability of the building. Indeed, except from the surface decay of the stone, which is a very serious matter, there is no part of the church in a condition to cause anxiety."

REPRESENTATIVES of several societies interested in archæology met Sir Edmund Antrobus on the 12th inst., at Stonehenge, to discuss the details of the resolutions passed

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at the recent conference in London. All the details of the work it is proposed to do with the view of maintaining the stones in a position of safety were fully discussed, and the representatives present unanimously approved all the suggestions made at the London conference. It was decided to proceed with the work as soon as the weather is favourable. It will be carried out under the supervision of Mr. Detmar Blow, assisted by an eminent civil engineer; and nothing in the way of restoration will be attempted. The only object the societies have in view is the preservation of this ancient memorial. The first work to be undertaken will be the raising of the hugh monolith which overhangs the altar stone and is in a most dangerous condition, into an upright position. It is the largest and finest monolith in England next to Cleopatra's Needle. At present it rests on a smaller stone, but there are two large flaws or cracks in it, and if it were to fall it is feared that it would be broken into three parts. The experts engaged in the work will then examine certain other of the stones with the view of putting them in a position to support the lintel which rests upon them. The other recommendations of the societies will be carried out in due course.

SOME "Notes on an Architectural Tour in Belgium" were given at a meeting of the Edinburgh Architectural Society on the 10th inst., by Mr. Jas. A. Arnot. In his opening remarks Mr. Arnot referred to the varied and interesting history Belgium had experienced from the time it was inhabited by Celts and Teutons until the present day. He then dealt with the architecture of the country, alluding specially to the clock halls at Affres, the halls at Bruges, and the guildry houses at Brussels and Antwerp. In his concluding remarks, Mr. Arnot observed that in Belgium there was at present a tendency to adopt the style which has become known as L'Art Nouveau, and whatever the merits or demerits of this departure from the beaten track, it was a subject worth studying, as it was undoubtedly the outcome of considerable thought. Some of the work had rather the appearance of architecture run mad, so great were some of the eccentricities; however, there was no question but that the style might have beneficial results, and perhaps lead on to attain to better things. The lecture throughout was illustrated by a large number of limelight views.

OWING to the delay in the carriage of certain important Spanish pictures from abroad, the date of the opening of the Exhibition, which had been fixed for Monday, April 22, has been postponed to Monday, April 29. The free admission of the public will commence at 10 a.m. on Tuesday, April 30.

THE Exhibition of Modern Illustration, now being held in the galleries of the Indian section (Imperial Institute Road) of the Victoria and Albert Museum, will be closed on May 4th next.

THE testing station of the British Fire Prevention Committee has changed its location from North Bank, Regent's Park, to Westbourne Lodge, 66, Porchester Road, Bayswater, W., to which address communications for resident engineer should be sent.

AN unusual haulage contract was recently performed at Sunderland. A house of two storeys was bodily removed from its site in Tunstall Road and carted off to Newcastle, which is twelve miles away. An American undertook the work; and the structure was underlaid with scaffolding, under which a trolley was subsequently run. Protruding from each side was a platform. On the one side a magnificent team of heavy horses were attached, and on the other horses and their attendants moved until on the principle of the see-saw the balance was obtained, on which the team was started, and the whole hauled off.

THE Glasgow Municipal Telephone system has now been completed, and at an early date 4,800 subscribers will be enabled to use municipal telephones in the commercial capital of Scotland. The system, which covers a wide area of accommodation in the Central Exchange being provided for no fewer than 12,000 subscribers, is an underground system. The conduits all run under the streets, and the wires are insulated with paper, a method which has the advantage of enabling a large number to be compressed into a small space. By this system "overhearing" is prevented, and no distracting noises disturb the conversation. The rates for using the telephones are lower than those in any other part of the Kingdom.

MANCHESTER'S annual expenditure upon its parks and recreation grounds is increasing. Last year it was £35,168. This year the estimated expenditure is £39,968. If the Heaton Park scheme is carried through there will be a still further increase. But this is as it should be, seeing how much lost ground has to be made up. This is not a joke.

THE death of Sir Edward Watkin removes a once notable figure in the world of railway and other engineering enterprises. Sir Edward commenced his connection with railway management in 1845 when he was appointed to the secretaryship of the Trent Valley Railway. This led to his joining the London and North-Western Company, and to his various positions as general manager, and afterwards as a director and chairman of the Manchester, Sheffield, and Lincolnshire Railway (now the Great Central), president of the Grand Trunk Railway of Canada, chairman of the South Eastern and Metropolitan and East London Railways, and director of the Great Western and Great Eastern Companies. Sir Edward Watkin did much to improve the harbours of Boulogne and Calais, so as to establish fixed services by large steamers; to increase the comfort of the transit, and to reduce the time between London and Paris. The proposed tunnel under the Channel to connect England and France was an enterprise with which he was connected in conjunction with the late Michael Chevalier, M. Leon Say, and other French and English public men. Sir Edward also investigated the question of connecting the south coast of Scotland and the north coast of Ireland by a submarine tunnel, whilst he advocated the extension of harbour and other public works as a means of increasing employment and augmenting the trading capacity of the country in competition with other nations.

A MODERN VIEW OF LONDON CHURCH ARCHITECTURE.—XIV.

BY T. F. BUMPUS.

(*Continued from page* 253.)

FORMED as it is beneath the steeple, the chancel of St. Matthias', Stoke Newington, is spanned by two arches of the most graceful form—one opening from the nave, and the other into the much lower brick-vaulted sanctuary—and springing from shafts corbelled off against flat responds. If lacking that delicacy which characterises the similarly treated shafts supporting the chancel arch at Margaret Street, the foliaging of the capitals at St. Matthias', which is by the way the only piece of sculpturesque detail in the church, is undoubtedly bold and vigorous.

The *raison d'etre* of the large wall space above these two chancel arches at Stoke Newington will be best understood by reference to the exterior view of St. Matthias', which accompanies this paper.

At St. Alban's, Holborn, the chancel arch, notwithstanding that the western and eastern limbs are of equal height, is kept somewhat low, the architect having a penchant for treating of the superimposed wall space in natural polychromy, which at St. Alban's is, if not altogether satisfactory, less crude than at All Saints'. In his South Kensington Church, Butterfield pitched his chancel arch unusually low, constructing in the wall space above it an unglazed window of four lights broken up into pairs by a stone cross, the whole treatment, although not entirely foreign to old English architecture, being one of those strokes of originality which in his hands never descended to *bizarrerie*.

The subject of chancel arches naturally introduces that of chancel screens, and with a few words on those found in Mr. Butterfield's London churches, these somewhat lengthy notices of his works must close. The high chancel

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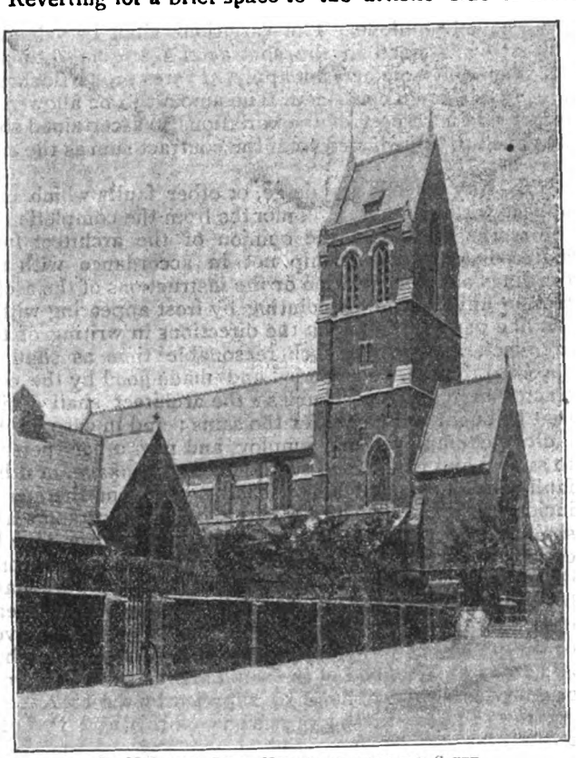
screen is a feature in which that architect never excelled —and the same may be said of his ecclesiastical furniture generally—indeed, he had a dislike to it, and during the earlier part of his career took no pains to conceal the fact. The interesting high stone screens in his two Scottish churches of St. Ninian, Perth, and the Holy Spirit at Cumbrae, were only introduced on account of those structures being the seats of the Bishops of Perth and Argyle and the Isles, respectively. At St. Matthias', Stoke Newington, there was no screen of any kind until 1875, when the present one of oak, in a style somewhat foreign to the church, was erected in memory of M. Brett, from the designs of Brooks, the paintings of the Apostles and Doctors in the panels by Westlake relieving some of its heaviness. Latterly, Mr. Butterfield was requested to design screens for the chancels of St. John's, Hammersmith (in wood), and for St. Augustine's, Queen's Gate (in iron), but neither of these examples can be pronounced satisfactory, only too clearly evidencing that their designer's heart was not in his work. What Butterfield excelled in was iron work to such low screens surmounting dwarf walls as at St. Alban's, Holborn, where that strap-like treatment of foliation became subsequently a characteristic feature of his work in this department of the art. The iron parclose screens, both here and at All Saints', are also quite *sui generis*, though at the time of their erection the critics found fault with them for their heaviness and solidity, as "destructive of the very idea of metal work which is ductibility."

It has been the writer's happiness to be connected for a number of years with a church—one of the four whose leading features have been sketched—built by Mr. Butterfield, where he was confined within the narrowest limit of cost, yet, at the same time, able to produce a building which for grandeur and religious solemnity will not readily be surpassed. Frequently, too, have visits been paid to the church in which he may be said to have had *carte blanche*. But in both equally considerations of reverence prevailed. The poor church is perfect in its proportions, and in all its plainness dignity is the leading feature. None can pass the portals of either without the aspiration —Quam terribile locus iste! Vere non est hic aliud, nisi domus Dei, et porta cœli.

Both are palaces, not for man, but for the Lord God.

Reverting for a brief space to the artistic side of these



St. Matthias', Stoke Newington, from the South.
W. Butterfield, Architect.

four remarkable London churches, it only remains to add that Early Middle Pointed English of the 14th century has been their architect's style of predilection, much in the same way as the Early French Pointed of the latter part of the 12th was of the late W. Burges. Yet he has used it in a fashion that he has made unquestionably his own; and, although there are certain features, especially in the colouration of his later works, that are

St. Augustine's, Queen's Gate.
W. Butterfield, Architect.

open to very grave criticism, it must be conceded that in point of dignity and grandeur of proportion, the four churches of which the writer has attempted to portray faint outlines, indicate the hand of an architect who will be accredited by future generations with the possession of an extraordinarily powerful and inventive mind.

It was the novelty imparted by Butterfield to features of English Pointed which were becoming stereotyped, that characterised his buildings and distinguished them, at a glance, from those of his contemporaries. Although he was among the first to introduce the beautiful natural polychromatic system of decoration, generally associated with more southern climes, into his churches, yet, in the treatment of such details as piers and their capitals, window traceries, arch mouldings, and above all, in his pertinacious rejection of the apsidal or hexagonal east end, Butterfield remained distinctly insular.

His works, therefore, while they are very wide departures from the commonly accepted type of English church, do not afford such complete exhibitions of revolt from insular precedent as several built in London between 1860 and 1870 by Street, Pearson, and Brooks, to the chief features of which our remarks in the next few succeeding papers must be confined.

OUR ILLUSTRATIONS.

THE SWANSEA HARBOUR TRUST OFFICES.

DESIGN BY W. ERNEST HAZELL, A.R.I.B.A.

GREAT disappointment has been expressed with the result of this competition. It was not a result to give confidence in the appointment of a professional referendum at the nomination of the Royal Institute of British Architects.

From Mr. Hazell's report on his design, we learn that the materials proposed to be used in the elevations were Ruabon red brick and light red terra-cotta, and the roofs generally were to be covered with Tilberthwaite green slates. Special attention had been given to the ventilation, heating, lighting, and general sanitary arrangements. The cost was estimated at £12,134.

THE IMPERIAL THEATRE, WESTMINSTER.

FRANK T. VERITY, ARCHITECT.

See Article

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R.I.B.A. GRISSELL GOLD MEDAL COMPETITION.

BRIDGE DESIGN BY T. LOCKHART SMITH, JUN.

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STANDARDISING SIZE OF BRICKS.

SIR,—A conference between representatives of the Institute of Civil Engineers, the Royal Institute of British Architects, and representatives of brickmakers will be held, at 4.0 p.m., on Friday, the 26th inst., at the Building Trades Exhibition at the Royal Agricultural Hall, Islington, to discuss the question of standardising the size of bricks. The following is the standard suggested by the two institutions:—

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The proposal to arrange a definite standard for the size of bricks is one which should meet with the approval and support of all who are interested in sound brickwork, it being impossible, with the varying sizes of bricks as at present made, to keep good sectional bond. It is hoped that a resolution will be passed at this conference which will establish a standard as suggested. At the meeting statements will be made as to the standards observed in America and Germany. All who are interested in the subject of brickwork are invited to attend.

Faithfully yours,
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Hon. Secretary R.I.B. Standing Committee for Science,
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SIR,—At the business meeting of the R.I.B.A., on Monday last, I was only able to direct the attention of those present to the general question which will be brought, formally before the members at a *special meeting* (for which I have given due notice) at an early date to be fixed by the Council at their meeting next Monday.

I will, in due course, inform you of the date fixed, so that we may have a full meeting, and pass—unanimously, I hope—resolutions having for their object the throwing open of this Memorial to the competition of every architect, sculptor, and artist who may desire to send in schemes.

Yours obediently,
WILLIAM WOODWARD.
13, Southampton Street, Strand,
April 17th, 1901.

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17.—Any defects, shrinkage, or other faults which may appear within months from the completion of the works, arising in the opinion of the architect from materials or workmanship not in accordance with the drawings and specification or the instructions of the architect, or any damage to pointing by frost appearing within the like period, shall upon the directions in writing of the architect, and within such reasonable time as shall be specified therein, be amended and made good by the contractor at his own cost, unless the architect shall decide that he ought to be paid for the same; and in case of default the employer may employ and pay other persons to amend and make good such defects, shrinkage, or other faults or damage, and all expenses consequent thereon or incidental thereto shall be borne by the contractor and shall be recoverable from him by the employer, or may be deducted by him from any moneys due or that may become due to the contractor. Should any defective work have been done or material supplied by any sub-contractor employed on the works who has been nominated or approved by the architect as provided in clause 20, the contractor shall be liable to make good in the same manner as if such work or material had been done or supplied by the contractor, and been subject to the provisions of this and the preceding clause.

20. All specialists, merchants, tradesmen, or others executing any work, or supplying any goods for which prime cost prices or provisional sums are included in the specification, who may at any time be nominated, selected or approved by the architect, are hereby declared to be

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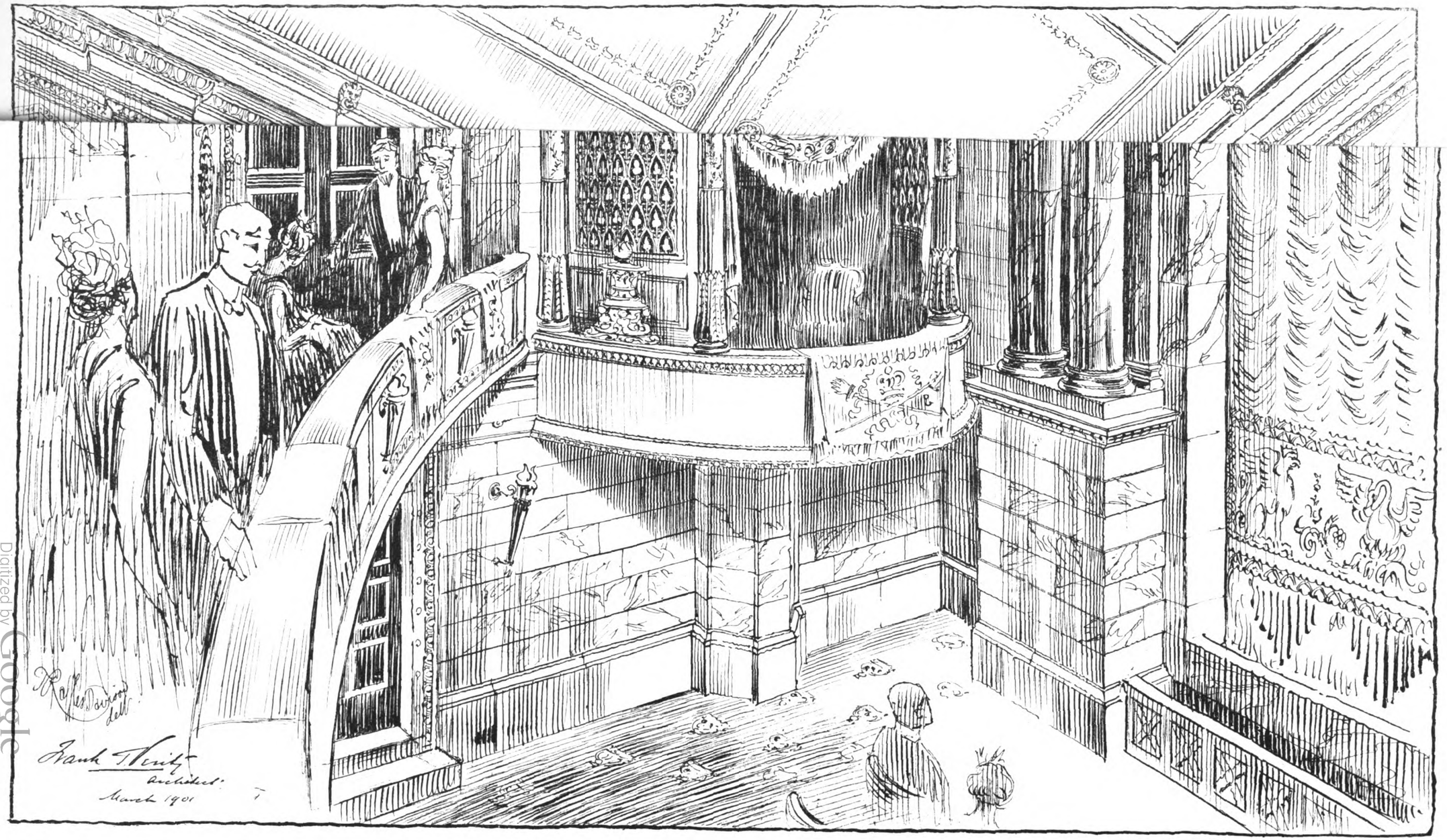

THE IMPERIAL THEATRE, WESTMINSTER, FOR MRS LANGTRY.

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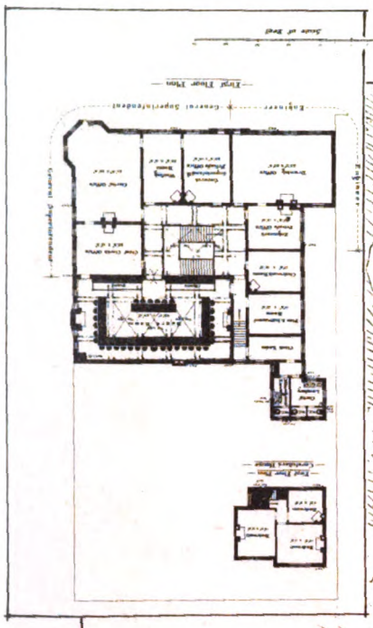

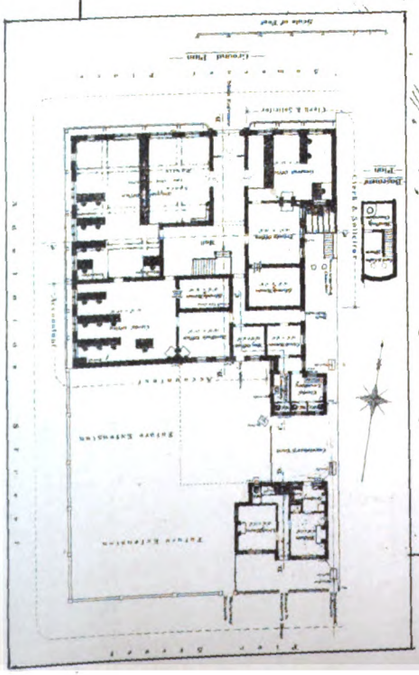

SWANSEA HARBOUR TRUST OFFICES. DESIGN BY WILLIAM HASELL, A.R.I.B.A.

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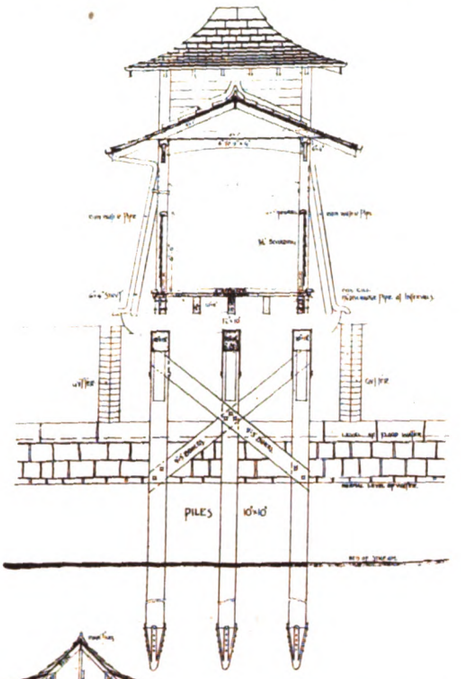

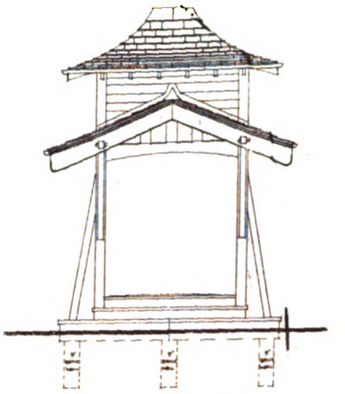

ELEVATION TO PATH.

GRISSELL PRIZE COMPETITION.
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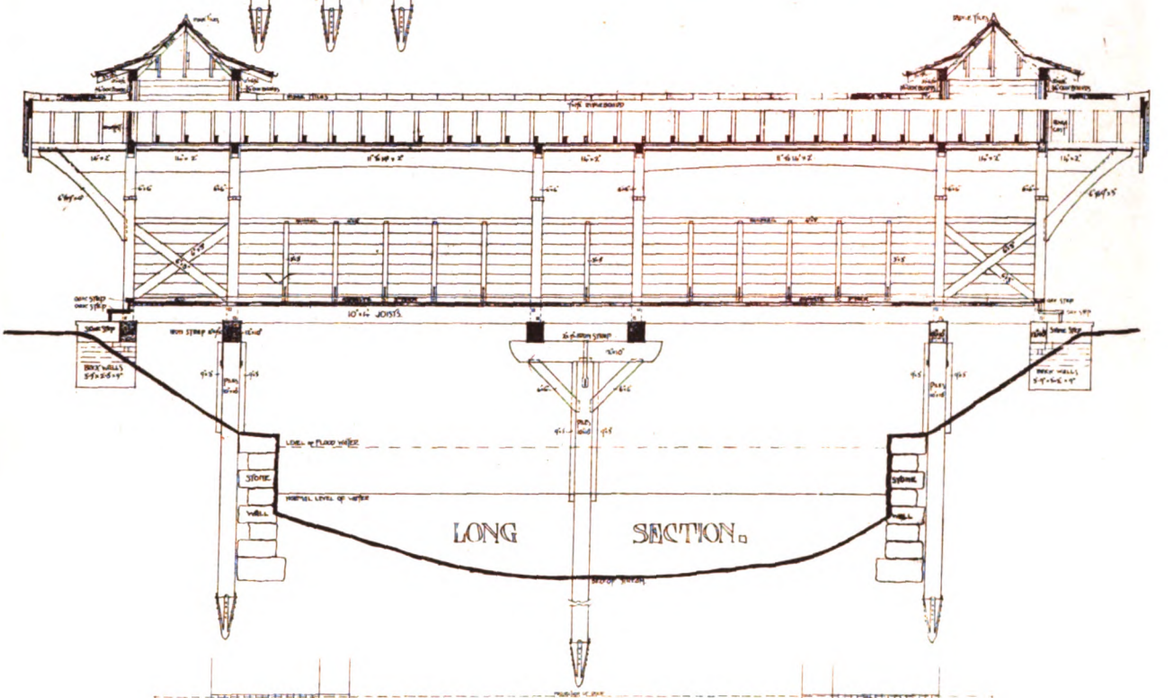
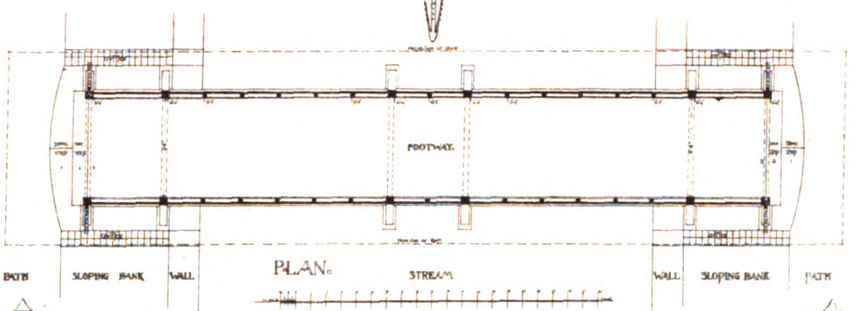
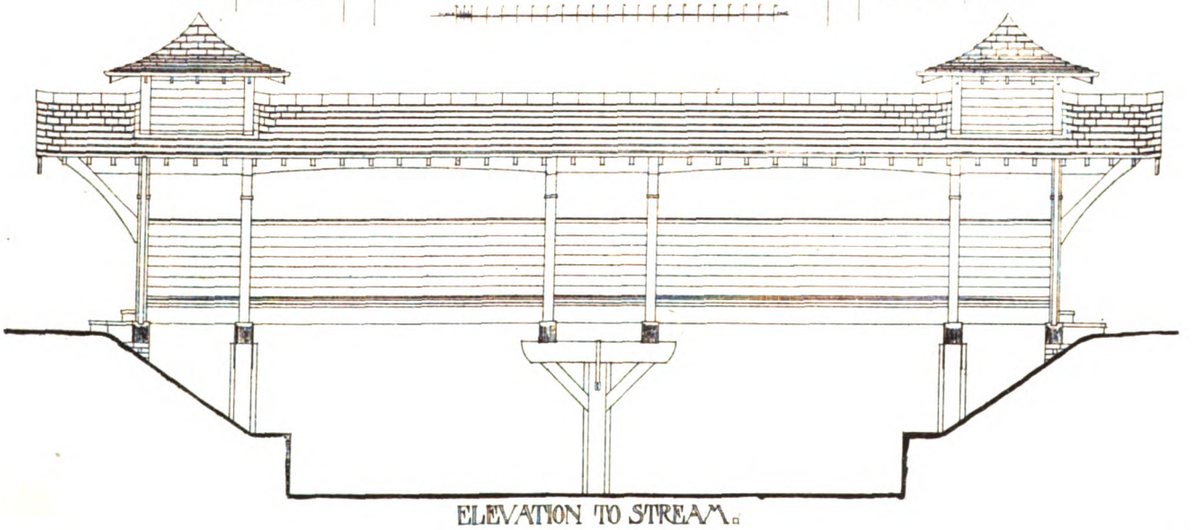


LONG SECTION.



PLAN. STREAM.



ELEVATION TO STREAM.

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A BRIDGE DESIGN BY T. LOCKHART SMITH, JUNR

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sub-contractors employed by the contractor; but no such sub-contractor shall be employed upon the works against whom the contractor shall make what the architect considers reasonable objection, or who will not enter into a contract with the contractor upon terms and conditions consistent with those in this contract, and securing the due performance and maintenance of the work supplied or executed by such sub-contractor, and indemnifying the contractor against any claims arising out of the misuse, by the sub-contractor or his workmen, of any scaffold erected or plant employed by the contractor, or that may be made against the contractor in consequence of any act, omission, or default of the sub-contractor, his servants or agents, and against any liability under the Workmen's Compensation Act, 1897, or any amendment thereof.

21. The contractor shall be responsible for all structural and decorative damage to property, and for injury caused by the works or workmen to persons, animals, or things, and shall hold the employer harmless in respect thereof, and also in respect of any claim made under the Workmen's Compensation Act 1897, or any amendment thereof, by any person in the employ of the contractor. He shall also be responsible for all injuries caused to the buildings, the subject of this contract, by frost or other inclemency of weather, and shall reinstate all damage caused by the same, and thoroughly complete the whole of the works.

28. The provisional sums mentioned in the specification for materials to be supplied or for work to be performed by special artists or tradesmen, or for other works or fittings to the building, shall be paid and expended at such times and in such amounts and to and in favour of such persons as the architect shall direct, and sums so expended shall be payable by the contractor without discount or deduction, or (without prejudice to any rights of the contractor existing under the contract referred to in Clause No. 20) by the employer to the said artists or tradesmen. The value of works which are executed by the contractor in respect of provisional sums, or in additional works, shall be ascertained as provided by Clause 13. At the settlement of the accounts the amount paid by the contractor to the said artists or tradesmen, and the said value of such works executed by the contractor, shall be set against all such provisional sums or any sum provided for additional works, and the balance, after allowing *pro rata* for the contractor's profits at the rates contained in the contractor's original estimate, shall be added to or deducted from the contract sum, provided that in estimating the amounts paid as last herein provided no deductions shall be made by or on behalf of the employer in respect of any damages paid by the sub-contractor to the contractor, the intention being that the contractor and not the employer shall have the benefit of any such damages.

29. The contractor shall permit the execution of work by any other artists or tradesmen who may be engaged by the employer.

32. Provided always that in case any dispute or difference shall arise between the employer or the architect on his behalf and the contractor, either during the progress of the works or after the determination, abandonment, or breach of the contract, as to the construction of the contract or as to any matter or thing arising thereunder (except as to the matters left to the sole discretion of the architect under Clauses 4, 9, 16, and 19, and the exercise by him under Clause 18 of the right to have any work opened up), or as to the withholding by the architect of any certificate to which the contractors may claim to be entitled, then either party shall forthwith give to the other notice of such dispute or difference, and such dispute or difference shall be and is hereby referred to the arbitration and final decision of

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, or, in the event of his death or unwillingness or inability to act, of a person to be appointed on the request of either party by the President for the time being of the Royal Institute of British Architects, and the award of such arbitrator shall be final and binding on the parties. Such reference, except on the question of certificate, shall not be opened until after the completion or alleged completion of the works, unless with the written consent of the employer or architect and the contractor. The arbitrator shall have power to open up, review, and revise any certificate, opinion, decision, requisition, or notice, save in regard to the said matters expressly excepted above, and to determine all matters in dispute which shall be submitted to him, and of which notice shall have been given as aforesaid, in the same manner as if no such certificate, opinion, decision, requisition, or notice had been given. Upon every or any such reference the costs of and incidental to the reference and award respectively shall be in the discretion of the arbitrator, who may determine the amount thereof, or direct the same to be taxed as between solicitor and client or as between party and party, and shall direct by whom and to whom and in what manner the same shall be borne and paid. This submission shall be deemed to be a submission to arbitration within the meaning of the Arbitration Act, 1889.

BRISTOL SOCIETY OF ARCHITECTS.

THE annual general meeting of this society was held at the Fine Arts Academy, Queen's Road, Clifton, on Monday last, Mr. G. H. Oatley, Vice-President in the chair. The scrutineers for the conduct of the election reported to the meeting that Mr. Frank Wills had been elected president; Messrs. W. L. Bernard and G. H. Oatley, vice-presidents; and the hon. sec., Mr. H. Dare Bryan, was unanimously re-elected. The following gentlemen were the members of the new council:—Messrs. La. Trobe, Nicholson, Silcock, Bath; Skinner, Joseph Wood, and J. Foster Wood, and Messrs. Green, Bath, and J. Cyril Thompson, associate members of council.

The annual report and balance-sheet presented by the council were, upon the motion of the chairman, seconded by Mr. J. Cyril Thompson, taken as read and adopted. The report detailed the work of the past session. The membership of the society now numbers 23 Fellows, 29 Associates, and 9 Student members. The balance-sheet shows a satisfactory financial state of affairs.

THE BUILDING TRADES EXHIBITION.—I.

THE Building Trades Exhibition, which opened in the Agricultural Hall, Islington, on Wednesday, will be found to be a thoroughly interesting one. In some sections it cannot be said to be fully representative, and one misses the names of not a few firms whose presence would have added considerably to the quality of the show. Yet in spite of this we must congratulate the management upon the excellent results they have achieved. The Fire Prevention section is a new feature, and is located by itself in the minor hall. This is under the auspices of the British Fire Prevention Committee, and makes an interesting display. There is also a Smoke Abatement section in King Edward's Hall, in which, however, there are only some two or three exhibits. The section of woodworking and other machinery is a large one, and full of interest. There was a good deal of the usual unreadiness on the opening day, so that our notice of the exhibits in detail must necessarily be somewhat brief this week. But we can at any rate promise such of our readers as may find it possible to run up to Islington a really practical and interesting exhibition. Indeed, it is pleasant to be able to emphasise this fact, and to note the complete absence of exhibits of a trivial and unimportant character. The exhibition is all through and thoroughly a building trades exhibition.

For a really sanitary and durable paving for stables and yards, etc., we commend to the notice of our readers, the Adamantine Clinker manufactured by Messrs. Towers & Williamson, Little Bytham, Grantham (Row F, Stand 126). These, when laid, make one of the most durable, as well as the most sanitary of stable floors. They are made with plain or chamferred edges, and can be had either in buff colour or red. They have been supplied to the Royal Mews at Windsor and Sandringham; also to their Royal Highnesses Dukes of Connaught, Cambridge, and the Late Prince Leopold, Dukes of Bedford, Westminster, New-

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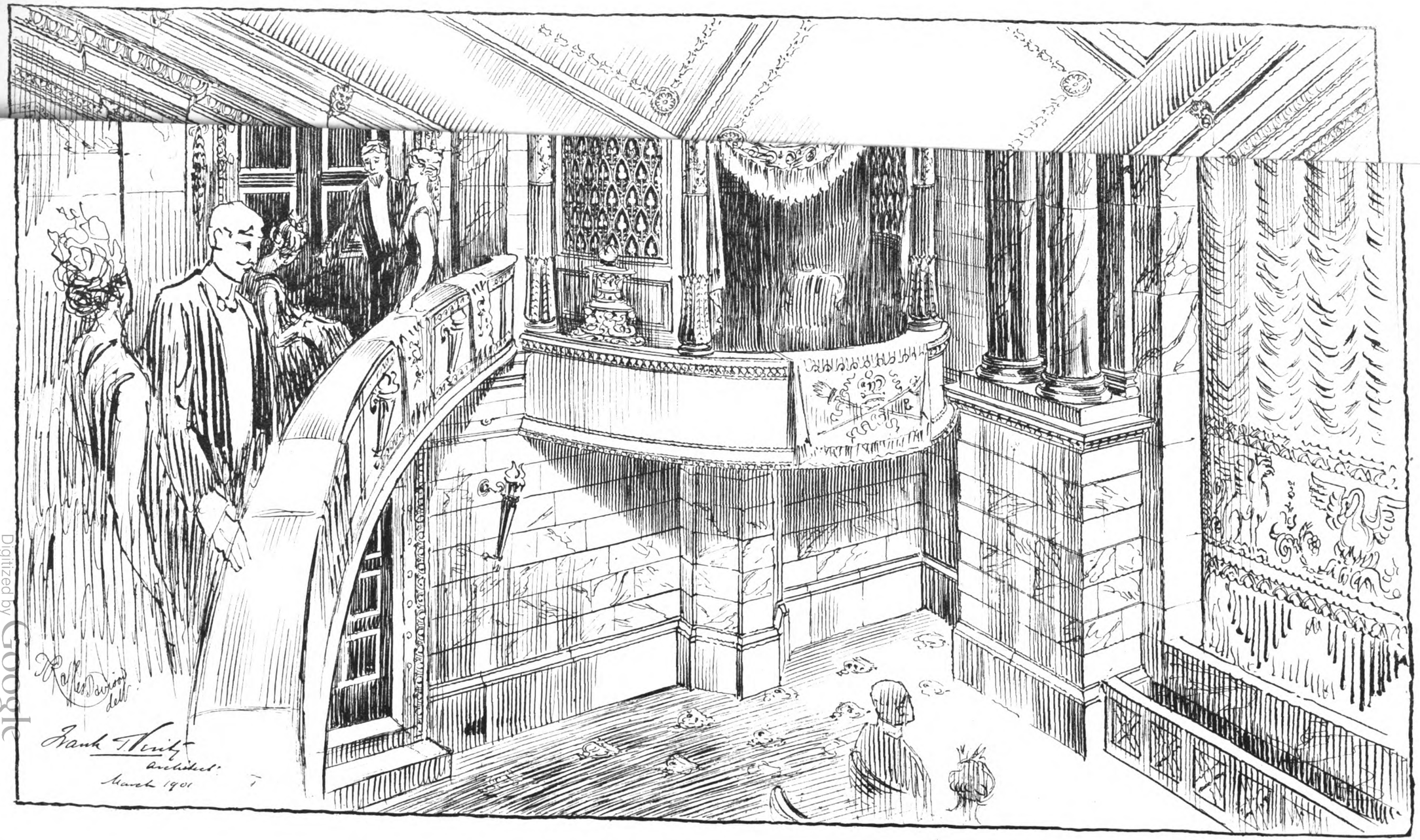

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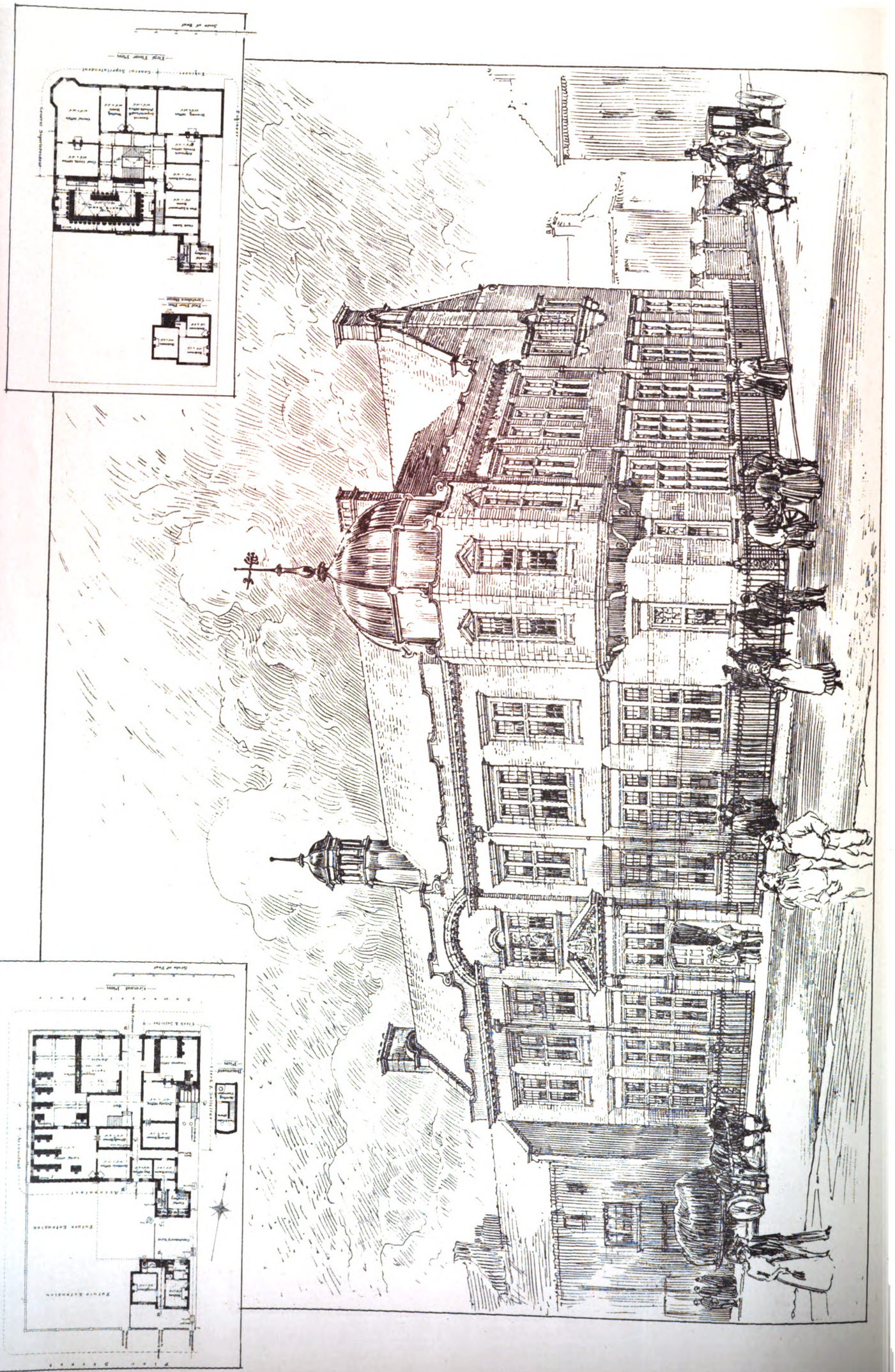

SWANSEA HARBOUR TRUST OFFICES. MESSRS. W. FERRIER, JOSEPH & C. LEE, ARCHITECTS.

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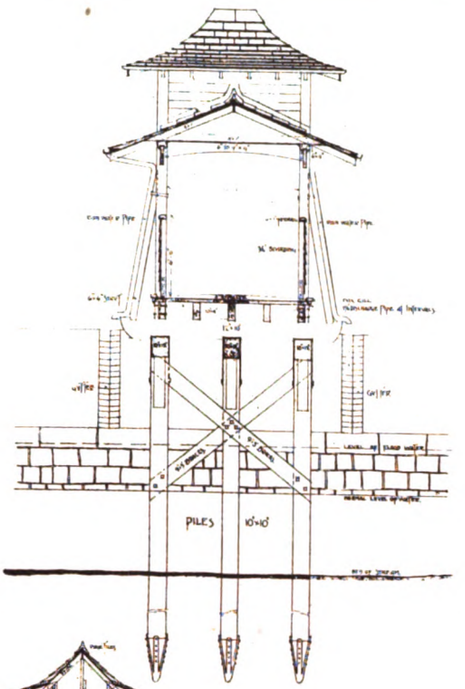

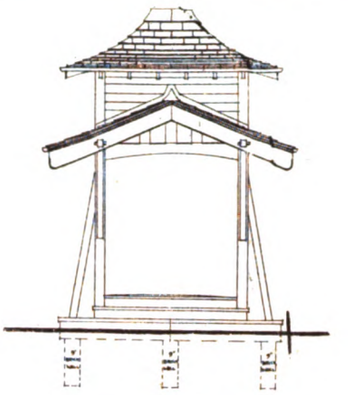

ELEVATION TO PATH.

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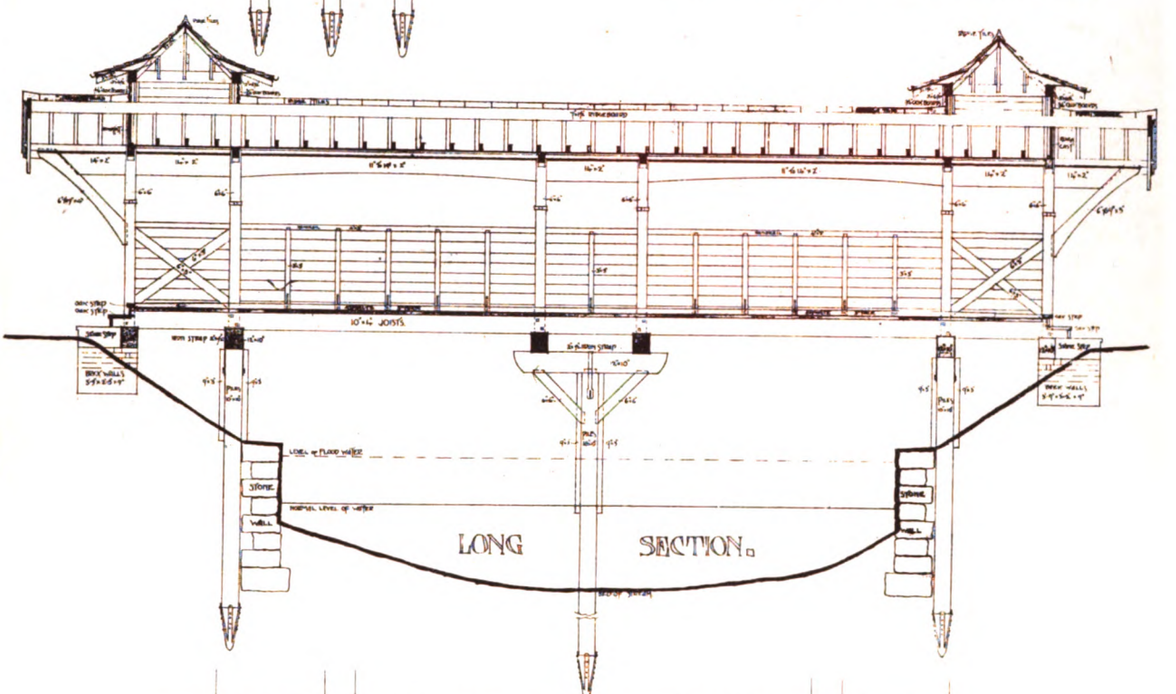
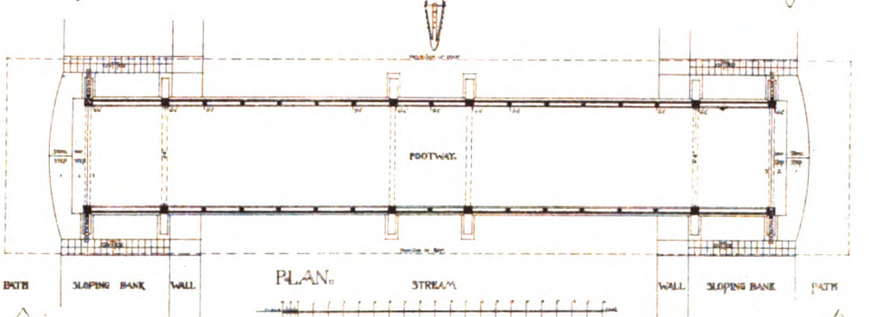
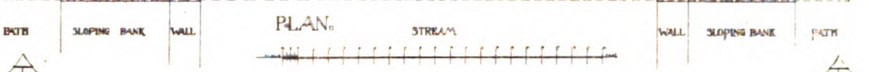


LONG SECTION.





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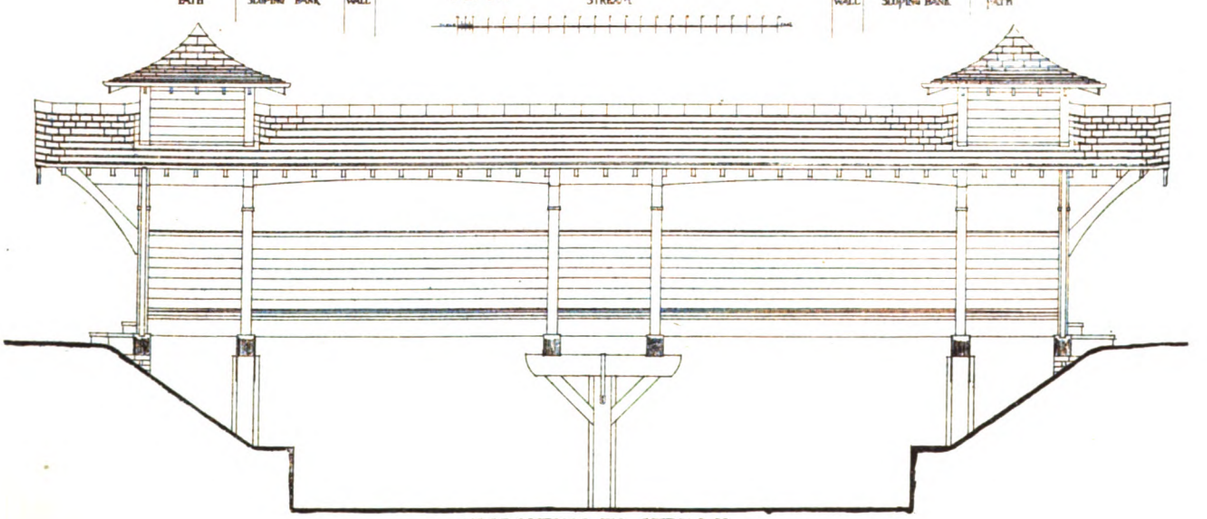

ELEVATION TO STREAM.

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A BRIDGE DESIGN BY T. LOCKHART SMITH, JUNR

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sub-contractors employed by the contractor; but no such sub-contractor shall be employed upon the works against whom the contractor shall make what the architect considers reasonable objection, or who will not enter into a contract with the contractor upon terms and conditions consistent with those in this contract, and securing the due performance and maintenance of the work supplied or executed by such sub-contractor, and indemnifying the contractor against any claims arising out of the misuse, by the sub-contractor or his workmen, of any scaffold erected or plant employed by the contractor, or that may be made against the contractor in consequence of any act, omission, or default of the sub-contractor, his servants or agents, and against any liability under the Workmen's Compensation Act, 1897, or any amendment thereof.

21. The contractor shall be responsible for all structural and decorative damage to property, and for injury caused by the works or workmen to persons, animals, or things, and shall hold the employer harmless in respect thereof, and also in respect of any claim made under the Workmen's Compensation Act 1897, or any amendment thereof, by any person in the employ of the contractor. He shall also be responsible for all injuries caused to the buildings, the subject of this contract, by frost or other inclemency of weather, and shall reinstate all damage caused by the same, and thoroughly complete the whole of the works.

28. The provisional sums mentioned in the specification for materials to be supplied or for work to be performed by special artists or tradesmen, or for other works or fittings to the building, shall be paid and expended at such times and in such amounts and to and in favour of such persons as the architect shall direct, and sums so expended shall be payable by the contractor without discount or deduction, or (without prejudice to any rights of the contractor existing under the contract referred to in Clause No. 20) by the employer to the said artists or tradesmen. The value of works which are executed by the contractor in respect of provisional sums, or in additional works, shall be ascertained as provided by Clause 13. At the settlement of the accounts the amount paid by the contractor to the said artists or tradesmen, and the said value of such works executed by the contractor, shall be set against all such provisional sums or any sum provided for additional works, and the balance, after allowing *pro rata* for the contractor's profits at the rates contained in the contractor's original estimate, shall be added to or deducted from the contract sum, provided that in estimating the amounts paid as last herein provided no deductions shall be made by or on behalf of the employer in respect of any damages paid by the sub-contractor to the contractor, the intention being that the contractor and not the employer shall have the benefit of any such damages.

29. The contractor shall permit the execution of work by any other artists or tradesmen who may be engaged by the employer.

32. Provided always that in case any dispute or difference shall arise between the employer or the architect on his behalf and the contractor, either during the progress of the works or after the determination, abandonment, or breach of the contract, as to the construction of the contract or as to any matter or thing arising thereunder (except as to the matters left to the sole discretion of the architect under Clauses 4, 9, 16, and 19, and the exercise by him under Clause 18 of the right to have any work opened up), or as to the withholding by the architect of any certificate to which the contractors may claim to be entitled, then either party shall forthwith give to the other notice of such dispute or difference, and such dispute or difference shall be and is hereby referred to the arbitration and final decision of

or, in the event of his death or unwillingness or inability to act, of

, or, in the event of his death or unwillingness or inability to act, of a person to be appointed on the request of either party by the President for the time being of the Royal Institute of British Architects, and the award of such arbitrator shall be final and binding on the parties. Such reference, except on the question of certificate, shall not be opened until after the completion or alleged completion of the works, unless with the written consent of the employer or architect and the contractor. The arbitrator shall have power to open up, review, and revise any certificate, opinion, decision, requisition, or notice, save in regard to the said matters expressly excepted above, and to determine all matters in dispute which shall be submitted to him, and of which notice shall have been given as aforesaid, in the same manner as if no such certificate, opinion, decision, requisition, or notice had been given. Upon every or any such reference the costs of and incidental to the reference and award respectively shall be in the discretion of the arbitrator, who may determine the amount thereof, or direct the same to be taxed as between solicitor and client or as between party and party, and shall direct by whom and to whom and in what manner the same shall be borne and paid. This submission shall be deemed to be a submission to arbitration within the meaning of the Arbitration Act, 1889.

BRISTOL SOCIETY OF ARCHITECTS.

THE annual general meeting of this society was held at the Fine Arts Academy, Queen's Road, Clifton, on Monday last, Mr. G. H. Oatley, Vice-President in the chair. The scrutineers for the conduct of the election reported to the meeting that Mr. Frank Wills had been elected president; Messrs. W. L. Bernard and G. H. Oatley, vice-presidents; and the hon. sec., Mr. H. Dare Bryan, was unanimously re-elected. The following gentlemen were the members of the new council:—Messrs. La. Trobe, Nicholson, Silcock, Bath; Skinner, Joseph Wood, and J. Foster Wood, and Messrs. Green, Bath, and J. Cyril Thompson, associate members of council.

The annual report and balance-sheet presented by the council were, upon the motion of the chairman, seconded by Mr. J. Cyril Thompson, taken as read and adopted. The report detailed the work of the past session. The membership of the society now numbers 23 Fellows, 29 Associates, and 9 Student members. The balance-sheet shows a satisfactory financial state of affairs.

THE BUILDING TRADES EXHIBITION.—I.

THE Building Trades Exhibition, which opened in the Agricultural Hall, Islington, on Wednesday, will be found to be a thoroughly interesting one. In some sections it cannot be said to be fully representative, and one misses the names of not a few firms whose presence would have added considerably to the quality of the show. Yet in spite of this we must congratulate the management upon the excellent results they have achieved. The Fire Prevention section is a new feature, and is located by itself in the minor hall. This is under the auspices of the British Fire Prevention Committee, and makes an interesting display. There is also a Smoke Abatement section in King Edward's Hall, in which, however, there are only some two or three exhibits. The section of woodworking and other machinery is a large one, and full of interest. There was a good deal of the usual unreadiness on the opening day, so that our notice of the exhibits in detail must necessarily be somewhat brief this week. But we can at any rate promise such of our readers as may find it possible to run up to Islington a really practical and interesting exhibition. Indeed, it is pleasant to be able to emphasise this fact, and to note the complete absence of exhibits of a trivial and unimportant character. The exhibition is all through and thoroughly a building trades exhibition.

For a really sanitary and durable paving for stables and yards, etc., we commend to the notice of our readers, the Adamantine Clinker manufactured by Messrs. Towers & Williamson, Little Bytham, Grantham (Row F, Stand 126). These, when laid, make one of the most durable, as well as the most sanitary of stable floors. They are made with plain or chamferred edges, and can be had either in buff colour or red. They have been supplied to the Royal Mews at Windsor and Sandringham; also to their Royal Highnesses Dukes of Connaught, Cambridge, and the Late Prince Leopold, Dukes of Bedford, Westminster, New-

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castle, Roxburgh, Portland, Earls of Shrewsbury, Derby, Brownlow, Lonsdale, Rosebery, Ancaster, Cowper, Baron Rothschild, Lord Penhryn, etc. Messrs. Towers & Williamson also exhibit a tile for garden edging, which should appeal to all who have had experience of the usual form of tile with its constant liability to get twisted out of line by gardening operations. This "20th Century" tile, however, is made with a flange at the bottom edge, which is made to lie under the garden path, which, when once allowed to get solid renders it impossible for the tile to be twisted out of shape as is usually the case, by digging or other work in the garden. The tiles are easily fixed, and will stand and keep straight.

Mr. Mark Gentry, Sible Hedingham, Essex (Row E, Stand 107), shows some excellent quality of material, colour, and manufacture in the well-arranged exhibit of his well-known "M.G." facings, rubbers, arch bricks, and moulded and enriched bricks.

Messrs. Mark Fawcett & Co. (Stand 167) exhibit their fireproof floor, now so well-known as to need no detailed description, and which was, if we remember rightly, first introduced to general public notice at one of these exhibitions some considerable number of years ago. Since then the floor has been very widely adopted, and its practical qualities as a floor thoroughly tested in every class of building all over the country, and also in the States. Messrs. Fawcett also exhibit their wood block floor, which our readers should note for the simplicity and rigidity of its formation, the blocks being all held in place by metal strips. We shall refer more particularly to this floor next week.

Palmer's travelling cradle is shown at Stand 2 in the Bays. This is, as we have before had opportunity of pointing out, a thoroughly practical invention, which, by its lightness, easy working, and capabilities of adjustment, commends itself very specially to the notice of builders and decorators. The apparatus consists of a light cradle or boat, raised and lowered by light and easily-worked ordinary tackle, the head blocks running along a wire-rope or cable (by the aid of guy-lines), carrying the cradle to any part of the structure upon which it is proposed to work, the operation being carried out by the man or men whilst in the cradle, and without any other assistance. The wire head-rope is tested up to 8 tons; its usual burden with two men is 4 cwt. The apparatus is equally adapted for inside and outside work, and can be used in very many cases where the ordinary cradle or ladders cannot be employed. It has been fixed, we understand, without accident upon over 12,000 of the most difficult positions in London. Amongst the large number of buildings where it has been used we may include H.M. Government Offices, Lambeth Palace, and most of the largest hotels, clubs, bridges and wharves, etc., in London. The apparatus can be used for every kind of structural alteration, as also for plastering, plumbing, painting, sign-fixing, etc., and the charge for its hire is stated to be lower, even for small jobs, than ordinary scaffolding, with the added advantage of easy and speedy fixing and removal which is often a very material advantage. The apparatus is shown here in practical working order.

The exhibits of Mr. John P. White (Row C, Stand 68) are eminently characteristic of this gentleman's enterprise in the design and manufacture of wood mantels, garden furniture, and other woodwork. The examples here shown will appeal very directly to the artistic sympathies of the architect. In mantels we have designs by Messrs. C. H. B. Quennell, H. Wilson, G. M. Elwood, W. A. Forsyth, and A. N. Prentice. Those by Mr. Quennell and Mr. Prentice are specially noticeable, whilst the one by Mr. Forsyth has an excellent panel executed in plaster by Mr. George Jack. Mr. Wilson's mantel in oak, with coromandel inlay, is characteristic of all Mr. Wilson's work, and is a striking feature. In garden furniture the seat by Mr. C. H. B. Quennell will attract attention for its satisfactory lines and general solidity and simplicity, whilst the garden gate is also a noteworthy exhibit.

At Mr. White's stand is also to be seen something of particular interest to architects and draughtsmen. This is a drawing-board arrangement, designed by an architect, and made by Mr. White. The drawing board here shown is mounted on a rest which not only tilts the board to any angle, but allows the board to revolve in such a manner as to allow of any part of the drawing being reached quite easily. At the bottom of the board, and running along its whole length, is a tray arrangement fixed to catch any set squares, T-square, scales, etc., which may slip down the board, and prevents them falling to the floor. The board and rest are placed on a very handy form of architect's table, also Mr. White's manufacture, fitted with a drawer for double elephant paper, and a smaller one for pencils, instruments, etc. In connection with this invention we must also name an attachment fixed on the blade of the T-square, at the centre of gravity, which enables the user to work the T-square much more easily by taking hold of the attachment than by holding the stock, particularly when working at the end of the square. Then there is also to be noted in the same connection an instrument called the curve-trace. This is a most simple instrument for drawing an ellipse and more subtle centre curves. By means of this and the T-square attachment the T-square can be rigidly fixed, either horizontally or at an angle, so that the draughtsman can have both hands at liberty for set squares, instruments, etc. The T-square and curvetrace attachments are made by Messrs. Allott & Jones, Bixteth Street, Liverpool.

A fine show is made by Messrs. Jos. Cliff & Sons (Row D, Stand 98) of their porcelain baths, lavatories, sinks, and urinals, as also their glazed bricks and fire-clay closets. A delightful little fireplace in majolica ware is also exhibited, together with some Lethaby rough surface bricks in a variety of pleasing colours. Architects will also note the doorway in tawny-coloured terra-cotta which is a replica of the one now being erected at No. 11, John Street. A variety of special patents in bricks and tiles are to be seen here, together with some excellent sanitary stoneware.

The stand of Messrs. S. & E. Collier (Row E, Stand 99) will attract by the excellent colour and quality of the well-arranged exhibits, which comprise a great variety of roofing, wall and ridge tiles, finials, bricks, chimney pots, etc. One of the features of this show is an entrance built up in red terra-cotta, which shows well the quality and colour of the material.

As usual, Messrs. Stanley Brothers, Limited (Row E, Stand 104), make a very comprehensive display of their well-known brick and tile goods. Here we have, in addition to the small building specially erected to illustrate the quality and appearance of these goods in a practical way, a large number of samples of their salt-glazed bricks, which show an admirable colour and surface, and are thoroughly vitreous in their composition. The white and coloured bricks are specially worthy of notice in that the glaze is not a mere surface covering, but practically forms part and parcel of the brick, so complete is the fusion between the glaze and the body of the brick. Then there are to be noted the excellent blue pressed bricks, the red ridge tiles, finials, roofing tiles, and terra-cotta ware, whilst the semi-encaustic tiles must also not be overlooked. A special feature in bricks are the improved salt and grey granite bricks, which are intended chiefly for use in the building of board schools, hospitals and public buildings.

A fine show of stained and mosaic glass has been arranged in an artistic erection by Walter J. Pearce, Limited, of Manchester, in a central position in the Hall. Those who were at the last Building Trades' Exhibition will remember, no doubt, the beautiful samples of work shown by this firm. This year they have done even better. Both in design and colour treatment they seem to be fully alive to the artistic possibilities of their materials, and to seek to make the best of them in refined and simple methods. We note specially a transome light for a hall, illustrating a poppy design with the motto running through it, "Pleasures are like Poppies spread." Also a similar light for a hall, on which is depicted a scene on the Wye, executed entirely in opalescent glass with charming effect. Some samples of glazing for the new techical schools at Manchester are also exhibited. Some quaint little picture panels in glass for nurseries are also to be seen; three that we noticed treated of Humpty-Dumpty, the House that Jack Built, and Little Jack Horner.

At the stand of Messrs. H. J. & C. Major (Stand 106, Row E) there is a capital show of the firm's specialities in weather-proof roofing tiles and interlocking plain tiles,

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together with specimens of ridge tiles and bricks, etc. Colour and finish of manufacture here leave nothing to be desired.

Messrs. Colthurst, Symons & Co., Limited (Row E, No. 111), make an excellent show of roofing tiles, plain and ornamental ridges, finials, etc. In texture, colour, and manufacture the goods cannot fail to commend themselves. The same may be said of the manufactures of the Somerset Trading Company, Limited (Row F, Stand 133), who exhibit a roof covered with their patent improved roofing tiles; and also a variety of ridge tiles, finials, and bricks, etc.

The British Luxfer Prism Syndicate, Limited (Row C, Stand 67), make a very effective demonstration of the many excellent qualities of their luxfer prism and electro-glazed glass. Commendable care and skill has been evidenced in the arrangement of the stand.

In Bay No. 5 Messrs. Moffatt & Eastmead, Limited, make an interesting display of their various excellent specialities in lifts and hoists. Their exhibits comprise:—(1) An electrically driven warehouse lift, fitted with a self-sustaining shaft in place of worm gear, and with an automatic mechanical stop action to prevent overwinding; (2) a self-sustaining hand-power goods lift, which requires neither brake nor brake rope; (3) a self-sustaining hand-power dinner lift, as supplied to flats and private houses; (4) improved automatic safety gates for protecting the entrance to lifts; (5) a belt-driven despatch sack hoist for granaries, breweries, stores, barrow hoisting, etc.; (6) a self-sustaining hoisting crab which dispenses with both brake and ratchet, and will not allow the handle to fly back. These two latter are shown working and are driven by a three horse-power electric motor, supplied by the General Electric Company, Limited; (7) one of Moffatt's improved 1900 patent feed-water heaters and fuel economisers for steam boilers. This heater is very compact and requires a very small space. Each of the internal tubes is fitted with an independent expansion joint, and when utilising the exhaust steam from a steam engine it will deliver water into a boiler at from 206 degrees to 208 degrees Fahr., and the water is purified and softened in its passage through the heater. A large number are in use in breweries, factories, laundries, etc.

Messrs. Perrett Bros. (Row E, No. 101) have a nice little show of tiles, etc., of good deep colour, and apparently excellent material.

Clark, Bunnett & Co., Limited, exhibit in Bay 12 some of their well-known specialities in lifts, to which we shall refer next week.

The Thames Bank Iron Company (Bay No. 6) make a specially good display of their well-known boilers for warming purposes and for hot water services to baths, etc.; radiators and hot-water fittings; sanitary pipes and connections, manhole covers and frames, rain-water pipes, etc.

Messrs. Messer & Thorpe (Row F, No. 127) exhibit their excellent bucket fire-extinguisher, which is an ingenious telescopic arrangement for having a number of fire-buckets full of water instantly ready. This extinguisher is always ready; it has no perishable parts nor taps, etc., to get out of order, and requires only yearly attention, as the water is kept pure and free from evaporation by an air-tight cover, which, when sealed, protects the extinguisher from misuse.

Messrs. Kaye & Sons, Limited, 93, High Holborn (Row B, No. 54), exhibit their well-known locks and fastenings in great variety. Messrs. Kaye's great speciality (and it is a great one) lies in their numerous patents for automatic locks and fastenings. Automatic door-fittings and fastenings are shown in great variety, and some of these are particularly noticeable as being adapted for use in public buildings, such as theatres, music-halls, lecture-halls, etc. Of the excellence of Messrs. Kaye's ordinary locks and latches we need not speak; their merits have been completely tested and determined.

The Mosaic Manufacturing Company (Row B, Stand 51) show some most excellent mosaic work, thoroughly artistic, both in design and colouring. Some very good specimens of parquet work are also shown. The firm make a speciality of their glass mosaic, of which there are some capital specimens shown. This is a stand which will prove attractive to the architect.

Mr. Joseph Fishburn (Row F, Stand 115) shows an improved form of winch, designed to effect a large saving of labour in the lifting and lowering of building materials and other goods. It appears to be simple and effective in operation, and to successfully attain the end aimed at.

The St. Pancras Iron Work Company, Limited (Row B, Stand 58), as usual, make a fine show of their well-known stable fittings, iron staircases, etc., to which we shall refer more particularly next week.

Messrs. Hodkin & Jones (Row F, Stand No. 118) show specimens of their excellent concrete masonry, the even texture and uniform colour of which has gained for it a wide reputation. They also exhibit a good example of marble mosaic and Terazzo paving.

The display of sanitary goods shown by Mr. James Woodward (Row C, Stand 79) is, as usual, comprehensive and good. Stoneware pipes and connections, channels, intercepting traps, earthenware closets, lavatories, and urinals; white and coloured glazed bricks together make up a well-arranged exhibit, which all interested in sanitary matters cannot fail to appreciate.

Messrs. Candy & Co. (special position, No. 4) have on view excellently selected and arranged samples of their architectural terra-cotta, buff terra-cotta facing bricks, granitic vitreous paving bricks, fire bricks, salt glazed bricks, white and coloured glazed-bricks, buff chimney tops, etc. Nothing could be better in colour than the buff goods here displayed, whilst the architectural terra-cotta shows a quality of manufacture and finish it would be hard indeed to surpass. The buff bricks, too, are of splendid quality, whether for architectural or engineering work, the body of the brick being thoroughly hard and solid right through.

In this section also, at Stand 30 Messrs. Hobbs, Hart & Co., Limited, exhibit a capital selection of their specialities in party wall doors, strong room doors, etc., to which we shall refer in detail in our notice of this section next week.

The Fire Prevention Section in the Minor Hall we shall refer to more particularly in our next issue. The exhibits include those of the Mural and Decoration Syndicate, Limited, New Expanded Metal Company Limited, F. McNeill & Co., The Fireproof Partition Syndicate, Limited, and Pease's Tubular Syndicate, Limited, which have all been noticed in our columns on previous occasions. There are also several new exhibits which have not been shown at these exhibitions before, notably, Messrs. J. A. King & Co., who have also a large stand in the principal hall, showing the application of the "Mack" fireproof and sound proof slabs and blocks for partitions, floors, ceilings, etc.; A. W. Green and Co., fireproof floors, etc.; the Columbian Fire-proofing Company, Limited, exhibit, showing their method of constructing fireproof concrete floors, and the casing of columns, stanchions, and joists in concrete; Pilkington Brothers, Limited, wired glass; the Asbestos and Asbestic Company, Limited, fireproof plaster; Eredi Frazzi; the London Fireproof Plate Wall Company, Limited; and the British Uralite Company, Limited.

WORKING CLASS DWELLINGS SCHEME FOR SUNDERLAND.

THE Sunderland Corporation having modified their plans of the dwellings proposed to be erected for the accommodation of people displaced by the demolition of slum property, there now seems to be a likelihood of a scheme which has occupied attention for 10 years being carried out. When the Corporation last invited tenders it was found that the lowest offer was £7,000 in excess of the estimated cost of the buildings. In order to effect a reduction in the cost the proposed concrete floors have been abandoned, and thus a saving on the estimate has been effected on this item alone of about £2,000, while the substituting of cement for white-glazed facings on the staircases means a further reduction of about £1,200.

The buildings will consist of three blocks, each three storeys in height. The first block, 165 ft. long by 80 ft. broad, will contain six double-fronted houses, with rooms on each side of a common staircase, there being six rooms on each floor, divided off into tenements. The second block, 126 ft. long by 72 ft. broad, will be similarly arranged

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for six three-storey double houses. The third block, the smallest, will measure 70 ft. by 40 ft., and will consist of three three-storeyed houses. The living-rooms will measure about 16 ft. 6 in. by 12 ft. 6 in., and the bedrooms 12 ft. by 12 ft. There will be one large common yard for each block, these being intended for playgrounds, drying spaces, etc. There are to be sculleries and conveniences—with water carriage—on each floor of all the buildings. As to the rents, it is intended to charge 4s. 6d. per week for three-roomed tenements, and 3s. 6d. for those of two rooms. It is not decided yet whether or not any portion of the buildings shall be let off in one-roomed tenements.

THE PLYMOUTH WATERWORKS.

A PAPER descriptive of these was read at a meeting of the Institution of Civil Engineers, on the 2nd inst., by Mr. Edward Sandeman, M.Inst.C.E.

The waterworks of Plymouth, Mr. Sandeman said, dated from 1590, in which year Sir Francis Drake, under powers conferred by an Act of Parliament of 1585, had commenced to build a weir on the River Mewe or Meavy, and to excavate an open watercourse or leat from the weir to Plymouth, a distance of 10½ miles in a direct line, but 18⅜ miles along the route taken. The drainage area above the weir was 4,885 acres.

The work had been completed, and water had been brought into the town in April, 1591. Water taken from the river by this means had supplied the town for 300 years. The open watercourse, however, was liable to be blocked in times of snow and frost, and for this reason, and also because the increased population demanded a larger and more certain supply, various schemes had been promulgated for the storage of flood-waters and the protection of the leat. In 1891 the author had been appointed water engineer, and a few months later he had presented a report, which had been adopted, advocating the building of a storage reservoir and the substitution of a line of pipes for the open leat. An Act of Parliament had been obtained in 1893 for the construction of the necessary works, which had been commenced in August of that year, Mr. James Mansergh, President Inst.C.E., acting as consulting engineer.

By the new scheme the drainage area had been increased from 4,885 acres to 5,360 acres. Nearly the whole watershed lay on the granite formation, a small portion on the west side being on the Upper Devonian. The rainfall was about 58 in. or 60 in. annually, and an interesting feature of this gathering ground was the unusually high dry-weather flow from it.

The Burrator reservoir was formed by two dams, one of masonry across the narrow gorge through which the River Meavy flowed, the other of earthwork lying between two hills, Sheepstor and Burrator. The greatest depth of water was 77 ft., and the area covered by water was 117 acres, the quantity of water impounded being 657,000,000 gallons.

The masonry dam (called the Burrator dam) was built of large rough blocks of granite in cement in the interior, and faced with irregularly coursed granite on both sides. From bottom of foundation to coping of parapet wall, the height was 145 ft. 6 in. A roadway, 18 ft. wide, was carried over this dam on five segmental arches of 25 ft. span.

The earthen dam was remarkable for the fact that its construction had involved the cutting of a very deep trench for the foundations, although the dam had to withstand but a small head of water. The trench had been cut through decomposed granite to a depth of 105 ft. in the centre, although the depth of water against the dam was only 17 ft. This trench was interesting on account of the peculiar geological features met with. The watertight core of the dam was of concrete (5 ft. in thickness) up to within a few feet of ground-level, and of clay from that upwards.

Water was drawn from the reservoir through two pipes, 36 in. and 25 in. in diameter, respectively, laid in a 10-ft. culvert built in the masonry dam. There was no valve-tower. There was a specially designed valve to close the mouth of each outlet-pipe, worked by gun-metal rods and chains from a chamber at the top of the dam, in addition to sluice-valves in duplicate in a valve-chamber on the lower side of the dam. The water drawn for consumption was passed through screen-chambers before entering the pipe leading to the service-reservoirs. The flood-water running to waste was measured over a weir 50 ft. wide, the height of the water over the weir being recorded on a drum turned by clock-work. The compensation-water was measured by an orifice-gauge placed immediately below the weir. The water supplied to the town was measured over a gauge-weir 12 ft. wide, after which it passed through a 25-in. Venturi meter, which automatically recorded the flow on a diagram.

The pipe-line, which had been laid in lieu of the old leat, was 4½ miles long. The pipes were 25 in. in diameter, and were capable of delivering between 8 million and 11 million gallons per day. The pipe-line had been completed in May, 1894, and the reservoir and other works in June, 1899, at a total cost of £178,000.

JOTTINGS.

A THREE-LIGHT window has recently been erected in the chancel of the parish church at Donnington Wood, Newport, Shropshire. The subject was "The Crucifixion," three small figures occupying the base of the lights representing St. Aidan, St. Matthew, and St. Chad. The whole was designed and executed by Mr. T. W. Camm at his studio, Smethwick, near Birmingham.

THE last meeting of the Glasgow Architectural Craftsmen Society for the present session was held on the 12th inst., Mr. Alex. Davie, I.M., in the chair, when Mr. J. Rendrick Edwards, Belfast, read a paper entitled "Warm Air Heating Apparatus and the Building Preparations Necessitated." The lecturer, by means of various drawings, illustrated various schemes of mechanical ventilation.

AT a special meeting of the Hackney Borough Council, held the other day, to consider the housing of the working classes in the borough, a report of the Public Health Committee was presented, recommending that, as far as may be desirable, the Council should adopt Part III. of the Housing of the Working Classes Act, 1890, also the Small Dwellings Act, 1899. After an amendment had been rejected by 27 votes to 23, the adoption of Part III. of the Act was carried without a division.

AT the Guildhall, Westminster, on the 29th ult., Mr. John Troutbeck, the High Bailiff, and a special jury sat to assess the amount of compensation to be paid by the London County Council to Messrs. John William & Walter Davies, pawnbrokers, for the compulsory acquisition of their premises, 34, Catherine Street, Strand, in connection with the Strand improvement scheme. Eventually the jury awarded the claimants £3,462.

FROM March 13th to March 24th, inclusive, there were 97,985 visitors to the Whitechapel Picture Gallery. The religious pictures of Ford Madox Brown and "The Carpenter's Shop" of Millais are perhaps the most general favourites. Certain of the landscapes met with appreciation, notably Constable's "White Horse." The most popular picture appears to be Poynter's "Horae Serenae," though Drummond's "Gods of the Ancients" is a rival favourite.

NORTHMOLTON CHURCH has received the bequest of a new lych gate, and this has just been completed. The gate, with its wing walls and accessories, has been erected by Mr. A. F. Terrell Shapland, to the memory of his parents. The walls are of local stone, the dressings of Dartmoor granite, the woodwork of English oak, and the roof of tiles. The masonry has been executed by Messrs. Sanders & Son, of Southmolton, and the oak work by Messrs. Harry Hems & Sons, of Exeter, who have admirably carried out the designs of the architect, Mr. James Crocker, F.R.I.B.A., of Exeter.

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The British Architect.

LONDON: FRIDAY, APRIL 26, 1901.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.—Examinations will be held on the following dates:—

The PRELIMINARY EXAMINATION on the 11TH and 12TH JUNE, 1901. Applications must be sent in on or before the 4TH MAY.

The INTERMEDIATE EXAMINATION on the 11TH, 12TH, 13TH and 14TH JUNE, 1901. Applications must be sent in on or before the 4TH MAY.

The FINAL AND SPECIAL EXAMINATIONS from the 21ST to 28TH JUNE, 1901. Applications must be sent in on or before 24TH MAY, 1901.

The Testimonies of Study, &c., with the necessary fees, must accompany the applications, all of which are to be addressed to the undersigned.

W. J. LOCKE,
Secretary R.I.B.A.

No. 9, Conduit Street, London, W.

THE R.I.B.A. AND THE VICTORIA MEMORIAL.

THERE is to be a special general meeting of the Royal Institute of British Architects on Monday evening next to consider the position of affairs in regard to the method adopted for obtaining designs for the Queen Victoria Memorial. The meeting has been called by the Council on the written requisition of twelve subscribing members so to do, under By-law 60. The subject will be opened up by the proposal of the following series of resolutions as submitted by Mr. William Woodward, A.R.I.B.A.

1. That in the opinion of this meeting the proposed National Memorial to Queen Victoria should be open to the competition of all British—including of course colonial—architects, sculptors, and artists.

2. That the first designs should be in the hands of the Committee at the date already fixed—viz., the end of June next—and that from those designs six should be selected, the authors of which should be engaged to perfect their schemes, and submit them at a date to be decided upon by the Committee.

3. That the author of the design selected from the six should be employed to carry out the work in collaboration with the sculptor, or sculptors, whom the Committee may designate.

4. That in the event of the memorial being thrown open to general competition, as above suggested, the information furnished to the five architects already appointed, for their guidance in the designs, be immediately made public.

5. That the whole of the preliminary designs, as well as the subsequent perfected designs, be publicly exhibited.

6. That these resolutions be at once transmitted to the Viscount Esher with a request that they be laid before His Majesty the King.

It is quite right and proper that the members of the Institute should have the opportunity afforded them of discussing the action of the Memorial Executive Committee and of making an official and practical protest against it. We hope that the members will turn up in something like representative strength, and thoroughly ventilate their opinions. There has never been an occasion upon which a graver injustice has been done to the professions of sculpture and architecture. We have already fully stated our opinions on the question, but the resolutions as at present set out seem to call for one or two comments.

In the first place we do not see very well how the committee could be asked to go back upon their decision in regard to the five selected architects or Mr. Brock so far as to ask them now to join in an open competition. But we think they might very well, in deference to the pronounced and widespread dissatisfaction amongst sculptors, architects, and artists generally, institute an open and preliminary competition, in which the at present selected architects and sculptor should not be asked to take part. To such a course we do not think the selected few could possibly object. They would go on as at present working out their designs, and then, when the final competition came, such designs would be duly considered with those of the selected competitors in the preliminary open competition. We make this suggestion for the meeting's consideration.

How far it is advisable to go into detail in regard to the management of the competition we are not quite sure. We see that Mr. Woodward suggests that the preliminary competitive designs should be sent in on the date already fixed, viz., the end of June. We think the end of July would be quite soon enough, and the time allowed for the elaboration and revision of the selected designs would not need to be so long. Then again, we think more than six designs should be selected. In a competition of such national importance it does not do to limit too severely the chances of a good selection of finished designs to choose from. We do not think a dozen architectural designs and half-a-dozen sculpture designs would be any too much. That the author of the selected architectural design should be appointed to carry out the work in collaboration with the sculptor chosen goes without saying. Resolution 4 we think unnecessary. For an open competition proper conditions and instructions would have to be furnished. The question of the exhibition of all the designs submitted in the preliminary competition is one which might well frighten even a national memorial committee! Considering that it is proposed that every British artist should be invited to send in competitive designs such a proposal might lead to a desperately awkward state of affairs—for the committee! Surely it would be enough to exhibit the score or so of designs submitted in the final and take the judgment of the selection committee on faith for the rest.

But all detail apart, the first and most important consideration is to secure the opening of the competition to all architects, sculptors and artists who may have the ability and willingness to compete. It is, of course, a bold undertaking to make the competition perfectly open, and must of necessity entail a considerable amount of labour upon those who might have to see it through. But surely the end justifies the utmost freedom of choice being provided for, and that there shall be a chance for the unknown genius as well as for the artist of established reputation. We want the best possible design, and to give no opportunity for cavilers to say hereafter that there was a closed door anywhere. If the Institute make the protest and that protest fails, they will at least have cleared themselves of their responsibility in the matter. Let us hope, however, that the Executive Committee may yet be prevailed upon to, in some way or other, satisfactorily meet the wishes not only of the protesting architects, but of the sculptors and other artists throughout the country who have also joined in the protest.

A MODERN VIEW OF LONDON CHURCH ARCHITECTURE.—XV.

By T. F. BUMPUS.

(*Continued from page 273.*)

OF the churches built in London under the "inventive" phase of the Gothic Revival, and when the rage for Pointed of a North Italian type was at its height, few attracted more notice, which to a certain extent it deservedly won, than St. James Less, in Garden Street, Westminster. Finished in 1861 from the designs of Street, whose love for the brick architecture of Northern Italy had just been expressed in his "Brick and Marble," St. James' Less church is perhaps the most complete and graceful example of constructional polychromy the metropolis presents, and while one is thankful to observe that its style has never become naturalised to the detriment of our own more vigorous Pointed, the architect undoubtedly displayed much genius in wedding an English church of the customary nave and aisled type to detail of a Southern character.

The pious munificence of the Misses Monk, daughters of the Bishop of Gloucester—formerly a canon of Westminster, and who died in 1856—aided Mr. Street in carrying out his ideas on a scale of more than ordinary sumptuousness, coloured brick, marble, and alabaster, entering into the composition with a cleverness and facility

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only equalled by the tactful sagacity which controlled their application.

The plan of St. James Less, ill-situated in narrow street lying behind the Vauxhall Bridge Road, embraces a clerestoried nave of three wide bays, with aisles and chancel. The outgabling aisles of the latter constitute a picturesque feature in the composition, while the semi-circular eastern termination, lighted by plate traceried windows of three divisions defined by boldly projecting buttresses, is one of the most delightful creations of Street's genius, a good view of it being obtainable through the tall iron grilles which fence off the courtyard containing the church and schools from Moreton Street. But the feature *par excellence* of St. James Less is its campanile, which stands a little distance from the church at its north-west angle, being connected with the aisle by an arcaded porch.

Lifting its head above the dingy tenements which environ it, like a lily among weeds, this campanile of St. James's, crowned by a short octagonal slate spire with spirelets growing out of the oblique sides, is a feature once seen never to be forgotten, its graceful proportions and the skill evinced in the manipulation of its varied materials commanding our admiration, while a more striking contrast to the somewhat prosaic dulness of the neighbouring church steeples can hardly be imagined.

Internally, St. James Less is as striking a specimen of constructional polychromy as All Saints, Margaret Street, with the difference that in St. James' there are none of those line patterns which so painfully jar upon us in Butterfield's earlier and equally masterly conception. Here exquisite and well considered detail reigns. Noteworthy are the capitals of the short, stout, circular columns of red granite, which, strongly annulated, carry the red and black brick arches of the nave. The carving of the capitals, evincing considerable delicacy and refinement, by Mr. James Forsyth, represent small groups of the Parables and Miracles, combined with bold foliaged ornament, while the pulpit has sculptured groups of the great preachings, and effigies of the Four Evangelists and the Four Latin Doctors, from the same chisel. As in the majority of Street's churches, the stained glass in St. James Less, Upper Garden Street, received the benefit of that architect's great iconographic knowledge and superintendence. Except in one instance it has all been executed by Clayton and Bell, and when properly completed will form a series as interesting as that in All Saints, Clifton. The apse is lighted by three windows, each composed of three narrow lancets, surmounted by a rose, and presenting parallelized scenes from the Old and New Testaments, arranged vertically. Thus the central window, reading across it, shows the Murder of Abel, the Brazen Serpent, and the Lamentation of Naomi, typified by the Betrayal, the Crucifixion, and the Lamentation of St. Mary Magdalene and the other Holy Women. From the narrowness of the lights all these groups are of a necessity somewhat microscopic, but the excellence of the drawing, and the care taken in the distribution of the tones, prevent any appearance of confusion, though a more liberal use of white, especially in the ground work, would have considerably enhanced the *ensemble*.

The clerestory windows above the two first bays—tripled lancets—are to receive figures of female saints, a very appropriate arrangement in a church founded by sisters. At present the only stained glass here is in the most eastern window on either side, a large one of three-light thrown up into a gable above the eave line, with the object of throwing more light upon Mr. Watts' painting by the water-glass process of the Doom. The northern of these two windows is, perhaps, an early work of Messrs. Morris & Marshall, and represents the Crucifixion, somewhat archaically treated upon a white ground quarried with tiny hexagons, charged with the sacred monogram. The opposite window, the Resurrection, by Clayton and Bell, is much broader in its treatment, and has brilliant tinctures, well set off by plenty of grisaille.

The nine lancet windows of the south aisle contain brilliantly-tinctured and amply-draped effigies of the Apostles, into which, as well as into the small group from the life of each, treated predella-wise, just the right amount of conventionalism is imported. Unfortunately, portions of the glass have peeled from insufficient burning, but the series taken at a *coup d'œil* from the north-west or the opposite angle of the building presents a very rich *ensemble* of colour, though certain tones here and there, notably a green in the background to the figure of St. Andrew and a blue in the robe of St. Bartholomew are susceptible of improvement. Inserted as it was at a later period, the stained glass in the northern aisle lancets is, in many respects, superior. Here we have two more of the Apostles—St. Simon and St. Jude (St. Matthias is omitted from the series)—St. Stephen, St. Paul, St. Mark, St. Luke, and St. John Baptist. Some of the tones here are peculiarly rich and harmonious. A citron brown and blue in the vestments of St. Jude, St. Stephen in a crimson dalmatic over an alb, St. Paul in olive green and Indian red, and St. John Baptist in a robe of indigo may be singled out for special commendation. The western windows—a pair of two-light ones with a rose above—will, if the iconographical scheme originally drawn up is adhered to, contain a representation of the Last Judgment.

The late Sir Arthur Blomfield, who at the time of the completion of St. James' had a predilection for the style in which that church is conceived, expressed his warm appreciation of it at the close of an address delivered to the Architectural Association at the opening of the Session, 1861-62.

"It is truly refreshing to turn from all this bustle of preparation and excitement," remarks Sir Arthur, anent the Great Exhibition then building "to the quiet contemplation of a most remarkable and beautiful building which has been completed within the last year. Time warns me that, instead of reviewing the architecture of the year, I must confine myself to the notice of this one building; but I feel no scruple in mentioning the church of St. James-the-Less, in Garden Street, alone, as in many respects it stands pre-eminent amongst modern churches, and, moreover, it exactly illustrates the principles to which I have so briefly and imperfectly alluded to-night. It would be an impertinence on my part to offer any criticism, or to speak in any ordinary terms of admiration of this church. Therefore I can only say to all lovers of Christian art: Go and judge for yourselves; you will there find real originality—that originality most to be desired, the result of a man having all his life continued diligently to collect materials for the exercise of his genius. You will find all in harmony for each part, and every detail has been thought over and worked out with a loving hand and an artist's eye. The whole of the building and its decorations (with, perhaps, one exception) bears the impress of one powerful mind. You see at a glance that the building was not, as is too often the case, planned so as to be carried out with least bother and trouble to the architect, and then handed over to the tender mercies of the ecclesiastical decorator and upholsterer, to make the best they could of the frigid carcase, but the design of the smallest detail forms an essential part of the whole. I will say no more than to recommend the eager student to go there to admire and learn, and the lukewarm to have his wavering fancies fixed, his enthusiasm stirred, and his energies braced to the work before him. Such a work as this places the fact beyond any dispute that real progress has been made in architecture in the last few years."

NOTES ON CURRENT EVENTS.

COMPETITIVE designs are invited by the Hereford Corporation for new municipal buildings. Premiums of £100, £75, and £50 are offered, and a deposit of £2 2s. is required from those sending for conditions and particulars, returnable on receipt of a *bona fide* design. There is no announcement of the employment of a professional assessor, nor any guarantee of the work being given to the author of the selected design. But if the author of a premiated design is appointed the premium is to merge in the commission. Both these points are unsatisfactory. Designs are to be sent in before the 30th of June next.

THE District Council of Buxton invite competitive designs for a structure for Thermal Water Pump to be erected in the Crescent, Buxton, as a memorial to the late Queen Victoria, at a cost not exceeding £1,000. Premiums of £20, £10 and £5 are offered, and a guinea is required for the conditions and particulars. This is not a very

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attractive competition. June 8 is the date for sending in the designs.

A decided novelty in competitions is the one instituted for new board schools at Aldershot to accommodate some 750 children. In this case we are informed:—"The successful plans and specifications to be approved by the Board of Education before the architect is entitled to receive the remuneration therefor, which will be 2½ per cent. on the contract price of the accepted tender. The commission will be paid upon the understanding that the architect, if not employed to carry out the work, will attend personally a certain number of meetings (not exceeding 12) of the School Board, to advise when desired without further remuneration. The Board do not bind themselves to employ the successful architect, but his plans will become the absolute property of the Board." This still leaves it a little vague as to the remuneration of the architect if he is appointed to superintend the carrying out of the work. Is he to do that for the same commission, or would he receive, as he ought to, an extra 2½ per cent.?

The Hereford Board of Guardians have given us a variation in the usual invitation to architects to send in competitive designs. They desire certain alterations to be carried out in connection with the existing workhouse buildings so as to bring them in line with the requirements of the Local Government Board. For this purpose they ask "experienced architects" to furnish them with reports for such alterations, and offer 25 guineas each for the two best reports submitted.

The restriction as to the construction of area lights in footpaths proposed by the Highway Committee of the Sheffield Corporation has been the subject of consideration by the Sheffield Society of Architects. In the annual report of the society read at the society's annual meeting the other evening it was stated that a letter had been sent to the Town Clerk in regard to the proposal, pointing out that up to the present the society had no intimation that area lights were objected to by the Corporation, and they were unable to ascertain that any resolution had been passed by the Highway Committee of the City Council in regard to this matter. They cousidered that some formal intimation should have been given to the architects of Sheffield before the Corporation changed their policy. The proposed prohibition of area lights was a serious matter affecting the value of property, both to owners and ratepayers of the city. The prevention of area lights would depreciate the value of building sites already acquired on the supposition that such lights would be allowed as previously had been the case, and it would considerably reduce the ratable value of the property. Area lights of the maximum projection, if properly constructed, constituted no danger or inconvenience to the public, and most of the important towns did allow them to be constructed under proper regulations. This had been considered by the Highway Committee and referred to the Works Sub-committee, upon whom a deputation from the society had attended. The sub-committee had delegated the Chairman, Vice-chairman, and City Surveyor to meet the deputation at a future date, and discuss the matter in detail.

In the current parish magazine of Leyland, near Preston, the Rev. Leyland Baldwin, the vicar, condemns the hideous utilitarian vandalism of the proposal to remove the ancient village cross, and to erect in its stead an incandescent lamp, flanked by public conveniences. "Leyland," says the vicar, "has done strange things in its days; centuries ago the bigots of the Ironside time broke the head from our ancient village cross, their earliest witness to Christianity, but it has been left for the twentieth century to suggest this crowning outrage, utilitarianism run mad, and tilting at our every religious, artistic, and historical feeling."

Perhaps the most interesting feature of the sale at Messrs. Christie's rooms on Saturday, was the series of five tiny drawings by the late Sir John E. Millais, the whole five of which were exhibited at the Grosvenor Gallery in 1886, at the Jubilee Exhibition in Manchester in 1887, and, a year later, at Glasgow. All five were purchased by Messrs. Agnew & Sons, and were as follows:—"My First Sermon,' 105 guineas; "My Second Sermon,"—90 guineas; "The Order of Release,"—170 guineas; "The Proscribed Royalist,"—130 guineas; and "The Huguenot,"—200 guineas. Two pictures by Erskine Nicol realised 300 guineas and 400 guineas respectively.

At the annual dinner of the Institute of British Decorators held the other evening, Mr. J. D. Crace, the president, remarked that the master decorator very frequently chooses the line of least resistance, and contented himself with work, which, though bad in principle, was the most popular and remunerative. Vigorously, and it was to be hoped successfully, the institute had set itself the task of discouraging such practices, and of teaching the amateur critic, though he might be unconscious of it, the true spirit of art. The craft was a very beautiful one, capable of great refinement if high ideals were followed, and in its three years of existence the institute, which now boasted 360 members drawn from all parts of the United Kingdom, had done much to raise the standard of judgment. Not the least practical of its efforts in this direction was the recent despatch on a Continental tour of inspection of some twenty of its members, whose observation and study would certainly be reflected in their future work. "Our ideal," said Mr. Crace, "should be so high as to be almost beyond what we can hope to reach. Then, even although our work is not immediately recognised, we shall derive the consolatory satisfaction of knowing that we have done our very best."

On Saturday last the members of the Edinburgh Architectural Association paid a visit to several old buildings in the vicinity of the city. They first visited the old Chapter House at Restalrig by permission of the Earl of Moray. They then proceeded to Duddingston, where they, through the kindness of the Duke of Abercorn and General A. H. Cockburn, were privileged to inspect the mansion-house, which is a very perfect example of Sir William Chambers' work, built in 1768. Afterwards they visited Duddingston Church.

Some discussion took place at the last quarterly meeting of the Midland centre of the National Federation of Building Trades Employers held at Birmingham, on the 19th inst., relative to the question of more effective federation of employers. Eventually a resolution was passed affirming the necessity for more combined action throughout the kingdom in dealing with disputes in the trade, which too frequently led to strikes and lock-outs. Another point discussed was the desirability for a uniform contract form containing clauses applicable all over the country in relation to such matters as strikes, lock-outs, arbitration, and weather.

A memorial has been signed by Sir Richard Temple, Sir Walter Besant, Dr. Richard Garnett, Canon Ainger, Canon Barnett, and many other prominent residents, asking the Borough Council to urge upon the London County Council further steps for preventing injury to the natural beauties of Hampstead. At present, the memorial states, no public authority has any general power of controlling the buildings erected in the borough. No request is at present made for an amendment of the Building Act. It is pointed out, however, that when a builder asks to be relieved of the exact fulfilment of any provision in that Act, the County Council may impose any conditions it sees fit. Such requests occur in a considerable proportion of all proposed building schemes, these cases having last year numbered 2,320. Some cases are already referred by the County to the Borough Council for criticism and advice; and it is urged that such opportunities should be seized for the protection of public interests. Even when the Building Act is complied with, the County Council can withhold its consent for two months; and it is urged that this power be used to notify the public of any proposal which there is *prima facie* reason to think may injuriously affect any public interest. An opportunity would thus be given for arrangement by mutual concession or by payment. The present practice is to give notice only to the owners of immediately adjoining premises; and the request of the memorial is merely for the extension of this practice.

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FOR the sum of £55,000 Messrs. Coutts and Company have purchased from the Crown the lease of the premises comprising the Lowther Arcade, together with the shops on each side of the Strand entrance. The widening of the Strand between the Hotel Cecil and Charing Cross, which will be effected in a year or two, will not, however, as was at first supposed, necessitate the removal of any portion of the house of Coutts, and the firm have, remarks the *Daily Chronicle*, only made a good investment in a site, which is as valuable and as interesting historically as their present premises. The Arcade is seventy years old. It was built in 1830, and owed its existence, as it now owes its demolition, to an early London street improvement scheme. It was named after Lord Lowther, who was Commissioner of the Office of Woods and Forests when the work was begun. It was built on the plan adopted by Lord Burlington when he erected in 1819 the arcade in Piccadilly, which still bears his name. Its 250 feet of length is occupied largely by toy-shops, where every article that pleases the infantile fancy, from a wild and woolly elephant to skipping ropes can be purchased for a modest outlay.

THE sixth annual report by the Chief Registrar of Friendly Societies of the proceedings of the registrars under the Building Societies Acts for the year 1900 shows that there are still 73 societies which were "certified" under the Act of 1836, and not having been incorporated under the Acts of 1874 to 1894, still remain on the register as "unincorporated." Of these, by far the most important is the Birkbeck, whose accounts swell the total to such an extent that the average receipts of these 73 societies come out enormously greater than those of the much more numerous incorporated societies. The accounts given in this return relate to 1899, the particulars relating to 1900 being merely notifications of alterations of rules, changes of name, dissolutions, and similar administrative matters. The general summary for the United Kingdom shows that in 1899 there were 2,390 societies, with 602,981 members; their receipts were £38,025,368; their liabilities were £61,133,685, of which £35,106,204 were to holders of shares, £22,580,361 to depositors and other creditors, and £3,447,120 represented undivided profit. The assets were £60,776,508, and show a "balance deficit" of £357,177 on the liabilities; they consist of £45,553,419 due on the mortgages, and £15,223,089 "other assets." As compared with the previous year the position of the societies has improved, the "balance of deficit" being less by £103,975.

ENGINEERING AND SANITARY NOTES.

By CHAS. E. GRITTON, A.M.I.C.E.

MAN, HORSE, AND CRAWLER.

ON Tuesday last, I had a most glorious drive over the hills from Hastings to Winchelsea, with splendid views in every direction, including Beachy Head and beyond, Ore, and other quaint old churches. Rolvenden, Fairlight, and many another glimpse of beauty. Old Indians in Hastings should look out for my driver. His acquaintance is worth cultivating. He went through the Afghan campaign with Lord Roberts, speaks some of the native lingo, and drives an old grey horse, whose capabilities seem doubtful until one tries him up hill. Once again I left the South Eastern severely alone. The latest conundrum is amusing. Why should one regard this miserable line not only with compassion, but almost with reverence? Because God made all creeping things!

THOSE WATER COMPANIES AGAIN!

Last week's *Public Health Engineer* contains a most interesting and valuable report by Chas. E. Cassal F.I.C., headed The Battersea Boro' Council against the Southwark and Vauxhall and the Lambeth Water Co's. The charge made was a grave one, that since 1892 samples of the water supplied by the companies have been regularly taken and submitted to the public analyst. That the water supplied has never been of high quality; that several samples have been found to consist of water of very inferior character; and that a number of others have been condemned as unfit for human consumption.

I must refer readers to the full report, but clause 4 is of such great importance that I quote it as it stands: "That the increase of typhoid fever in London during the winter months (when the cases of this disease ought to diminish in number) can at present only be accounted for by the fact that insufficiently purified water is apt to be supplied to the greater part of London, particularly during those months, and that susceptible persons contract the disease by drinking this impure water."

SEWAGE MACHINERY COMPETITION.

The River Irwell Conservancy Committee, Salford, invite competitive plans for machinery or appliances for use on their sewage works, filters, or bacteria beds for surface raking, excavating, and washing. A premium of £50 is offered. Further particulars may be obtained on application to the Borough Engineer, Town Hall, Salford.

THE TWOPENNY TUBE VIBRATION.

It has now been definitely decided that no more witnesses shall be called before the Board of Trade Departmental Committee on vibration in connection with the Central London Railway. The Committee, in view of the investigations to be carried on before the Joint Committee of Parliament respecting the Bills promoted for the construction of other underground electric lines, will proceed with the preparation of their report as rapidly as possible. A meeting will shortly be held at which such report will be put into form.

DECORATORS' AND PAINTERS' MAGAZINE.

Messrs. Dale, Reynolds and Co., of 46, Cannon Street, E.C., send me particulars of their new paper which is to be produced with the above title. The first number of this new magazine is promised for May 15th next. The size is to be handy and no advertisements are to appear amidst reading matter. The guiding principles from start to finish are to be practicability and usefulness. It is to be edited by Arthur Seymour Jennings, formerly Editor of *Painting and Decorating*, of Philadelphia; and will appeal, among others, to artists, house painters, scene painters; yacht, ship and boat painters; grainers, paperhangers, coach painters, sign writers, decorators, and stained glass workers. Ten thousand copies of the first issue will be circulated at home and abroad. May it have a successful career.

OUR ILLUSTRATIONS.

S. AFRICA MEMORIAL ADDITION, CHARTERHOUSE SCHOOL.

W. D. CARÖE, ARCHITECT.

BOTH old and new Carthusians will, we imagine, hear with pleasure that a scheme is afoot for memorialising in a permanent fashion those who have fallen or taken part in the South Africa war by a useful as well as ornamental addition to the Charterhouse buildings. It is proposed to erect a cloister upon the south side of the chapel, which will provide a much-needed covered entrance to the chapel, and connect it with the existing corridors within the building.

The present building was erected by the late Philip Hardwick in 1875, in an early Gothic manner characteristic of the period. The chapel suffers somewhat from lack of sufficient elevation, and it has been necessary to take special care to prevent the cloister in any way dwarfing the building. A transept has, therefore, been thrown out, which gives much-needed additional accommodation within the chapel and greater prominence to the exterior. Vestries are also provided beneath the existing aisle. The statue of Dr. Haig Brown, which now stands outside, will be placed within the new cloister as indicated in our sketch. This new cloister, with its stone-vaulted roof and double-traceried windows, will be lined with fixed seats, and will have a very pleasing perspective effect from either end.

There is no doubt this new addition to Charterhouse will very agreeably indicate the improved quality in Gothic design since the 1875 period, and will give a point of genuine architectural interest to a large pile of school

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buildings which are certainly not the most creditable record of the Gothic revival.

DESIGN FOR A FOOT BRIDGE.

BY E. STANLEY MITTON.

This sensible and excellent design was one of those which have made the Grissell competition this year a memorable one. The subject was certainly a simple one, but it was very gratifying to find some half-dozen of the designs so thoroughly appropriate and good. Mr. Mitton's drawing was, moreover, of capital quality.

THE CLASSIFICATION OF ROMANESQUE ARCHITECTURE.

MR. FRANCIS BOND, M.A., read a very interesting paper on this subject, at the Royal Institute of British Architects, on Monday evening last. The lecture was illustrated by an excellent series of lantern slides from photographs taken by the author himself.

In introducing his subject Mr. Bond alluded to some of the difficulties which beset the student on his first introduction to the great style which preceded Gothic, and was based on Roman work. This subject of the classification of the Romanesque styles was a large one, and could only be dealt with shortly within the limits of his paper. Classifications already existed—those of De Caumont, Quicherat, Viollet-le-Duc, and particularly Anthyme Saint-Paul, were referred to—but they helped one but little forward. It remained to consider whether a wider basis of classification could not be found—one resting on the main facts of plan and structure.

First of all, what was the one thing that the old builders—whatever the schools they belonged to—were trying to do? With the exception of a certain number of them who were attempting to solve the church-building problem by following the type of St. Stefano Rotondo at Rome, or of St. Vitale at Ravenna, and whose furthest outposts, with the exception of the churches of the Knights Templars and the Knights Hospitallers, are to be found in the churches of Aix-la-Chapelle, Ortmarsheim, and Germigny-des-Prés, all the builders of Western Europe, from the ninth century, when Romanesque architecture commenced, to the twelfth century, when it was superseded by Gothic, were engrossed with one supreme problem—how to vault a basilica. This was the master-problem of the builders of the Middle Ages from the end of the ninth to the middle of the twelfth century. The amount of engineering skill, the ingenuity, and the variety of the solutions proposed were astonishing. They seemed never to have had their full due. Gothic architecture got nearly all the credit. As a matter of fact, every single one of the main difficulties inherent in the task had been effectually met—and met in more than one way—before the first Gothic architect ever handled a trowel. Early in the twelfth century, or before, at least five complete solutions had been arrived at, as may be seen at Le Puy, Tournus, Cluny, Speyer, and Durham.

The problem how to vault a basilica meant—(1) that there were to be aisles as well as a high nave; (2) that some form of vault construction was to be devised; (3) that since a vault of stone was heavy, piers must be substituted for graceful, but weak, classical columns; (4) that the thrusts of the high vault of the nave must be stopped in some way by abutment in or above the aisles; (5) that top-lighting by clerestory windows was to be retained; (6) that the outer surface of the vault must be protected from the weather.

I. In most cases one or more of these conditions were evaded. One school—the most ancient of all, which held the whole of the field till the ninth century—simplified the problem by omitting the vault and retaining the colonnade.

II. A second solution—also very incomplete—was to omit the aisles; to build a hall-church roofed with a tunnel vault. This simplified the question of supports, for it substituted solid walls for hollow arches, any amount of clerestory light could be introduced, and the walls could be thickened to any extent to provide continuous abutment to the thrust of the great tunnel vault. Everywhere it was the natural and proper solution where only a small church was required, but it was employed in Provence even in churches of cathedral rank.

III. A third method, represented by the school of Périgueux, also removes the difficulties of supports, abutment, and top-lighting by eliminating the aisles. It presents us with another variety of hall-church, roofed, not with a tunnel, but a row of domes, and it is to be noted that the corners of each square bay of the nave are filled in with pendentives to support the dome.

IV. The next method is found only in the church of Loches, near Tours. Originally there was a low tunnel-vaulted nave, without aisles, of the eleventh century. But about 1160 the eastern portions of the nave were pulled down, two square bays were formed, and on these bays two spires were erected.

V. In two churches of the first rank a row of domes was employed to roof an aisled nave. The nave was spanned by a series of strong arches. These were so placed as to divide the nave into square compartments. On each square an octagonal dome was poised, the corners of the square being filled up with corbelling or squinches to afford support all round to the base of the dome. The typical example of this is the wonderful cathedral of Le Puy, the nave of which is roofed by a row of six domes on squinches.

VI. The next method may be distinguished as the arch-and-lintel system. Strong transverse arches were built across the nave about 9 ft. apart; a wall was built on each arch rising up to the apex of the arch, and then lintels of basalt were laid longitudinally—*i.e.*, from west to east. Count Vogüé has fully illustrated this curious phase of architectural history in *La Syrie Centrale*.

VII. We next come to a whole series of attempts to solve the problem by covering an aisled nave with what is called a tunnel, waggon, barrel, or cradle-vault. Of these the most scientific is that of Tournus Abbey Church. As in the churches of Syria, the nave was spanned by stout arches, each arch carrying a wall. But each pair of these walls, instead of carrying lintels, as in Syria, carries a short tunnel set *transversely*.

VIII. We now come to the vast number of churches in which the tunnel-vault of the nave was placed longitudinally—*i.e.*, in the direction of the axis of the church. The naves vaulted with longitudinal tunnels may be divided into those (*a*) where the tunnel rests on a pier-arcade; (*b*) where the tunnels rests on the arches of an upper vaulted aisle; (*c*) where the tunnel rests on a wall pierced with clear-story windows.

IX. Such interiors as that of Notre-Dame de Poitiers were painfully low. It would have been dangerous, however, to raise the tunnel much by increasing the height of the piers. So, in Auvergne especially, the expedient was hit upon of building two aisles instead of one, both vaulted; then the tunnel could spring at a much higher level. Moreover, some of the gloom of the Poitevin type of nave could be dispelled by piercing the back wall of the new upper aisle with windows.

X. The first step to carry out the one unfulfilled condition in the problem—the provision of clearstory light—was taken by piercing the base of the tunnel itself with clear-story windows. The final step—a most important change—was to insert the windows wholly in a clearstory wall. This latter seems to have been accomplished independently in the south, in Provence and Languedoc; in the north, in Burgundy. The clearstory was already in use in tunnel-vaulted churches in the eleventh century at Saint-Guilhem-du-Désert, in the Southern Cevennes; and in Burgundy on a small scale at Saint-Benoit-sur-Loire (commenced 1062), and on a gigantic scale at Cluny (commenced 1089).

XI. This solution, which was destined, within a generation or two, to culminate in the Gothic architecture of Saint-Denis (1140), consists in covering a nave with unribbed groined vaults.

XII. The final step was to substitute the ribbed for the groined vault, to dispose the vaulting compartments of the nave in oblongs, to facilitate the vaulting of these oblongs by the application of the pointed arch, and to transmit the thrusts of the high vault by means of flying buttresses to the buttresses of the aisle walls. To this, Gothic architecture added three developments: (1) It weighed the buttresses with pinnacles; (2) to a large extent it replaced

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the masonry of the walls by glass; (3) in Durham nave, the Abbaye-aux-Dames, and elsewhere, abutment was sometimes provided by flying buttresses disposed beneath the aisle roof. In Gothic the flying buttresses are placed above the aisle roof.

XIII. This method, which consisted in omitting the vault, was no solution at all. The nave is not constructed in genuine basilical fashion, as in the first method, but is built as if a vault were intended. The home of this unworthy construction is Normandy.

Of the above solutions of the vaulting problem, the third, the employment of a dome resting on pendentives, is by itself a full and satisfactory criterion. It occurs nowhere except in a group of some thirty-five churches in the district of Périgueux, with such "outliers" as Fontevrault and Angoulême. No. 2, the hall-church, is most common in the south-west and south of France, from Poitou to Provence. It may be vaulted either with a longitudinal tunnel or with groined or ribbed vaults. No. 8, where a tunnel-vault rests directly on the pier arches, occupies much the same districts as No. 2. No. 9, where the tunnel rests on the arches of an upper aisle, extends from Clermont-Ferrand, in Auvergne, to the south-west as far as Conques and Toulouse. No. 10A, where the tunnel is combined with a triforium and clerestory, is the final development reached in Burgundy. No. 10B, where there is tunnel and clerestory, but no triforium, is the solution of Provence and of Piedmont. No. 12, the ribbed vault, occurs sporadically, except in Germany and Lombardy, where it is characteristic. No. 13, the unvaulted nave, was nearly universal in Normandy and England till the twelfth century was well advanced.

The author went on to consider how these eight divisions will stand other tests. A very important test is afforded by the planning of a church, especially of its eastern limb. It must suffice to trace four main types of choir-plan. The first is that with three parallel eastern apses, of which there is a variant with square-ended aisles, as at Cerisy-la-Forêt, and another with aisles square externally and semi-circular internally, as at Romsey. This is pre-eminently the plan where the unvaulted nave prevails, viz., Normandy. It is frequent in Lombardy and in those Provençal churches that have aisles. A second plan is that of the ambulatory and "chevet." It is rare in Germany, Lombardy, and Provence, and non-existent in Normandy (excluding England).

The plans alone, apart from other considerations, would entitle Germany to rank as a distinct architectural province. In Provence the aisled churches generally have three parallel eastern apses.

The divisions may be tested again by the treatment of the central Tower: (1) its vaulting; (2) its shape, whether square or octagonal.

The Romanesque builders had three forms of vault at their disposal in the elevenfh century: the groined vault, the tunnel-vault, and the dome. The most difficult problem they had to cope with in vaulting was the question of putting a vault over the crossing, resting, not on walls, but on four unbuttressed legs. They had hardly dared yet to put a groined vault over their naves, fearing its concentrated thrusts. There favourite tunnel-vault could not be used at all at the crossing, for it needed solid walls for its support. They had perforce to use the dome, in all cases, I think, except in the Perigueux district, resting on squinches. Secondly, they had to stop the thrusts of this dome by carrying up a central tower to weight the arches or walling on which the dome rested. As regards the shape of this tower, they had two alternatives. The crossing was square, and so the tower over it might be square, as was the great central tower of Cluny and that of Tournus. But the squinches reduced the square of the crossing to an octagon, and as the tower rested directly on the octagon, and not on the square, it was more natural that the tower also should be octagonal. Hence that magnificent series of octagonal central towers in Burgundy and Southern France, Germany and Lombardy, culminating at Mayence and Saint-Sernin, Toulouse. In Normandy and England, on the other hand, the builders hardly ever dared to vault their naves at that early date, and never the crossing. And there being no dome in an Anglo-Norman tower, it is square.

Another test is afforded by the grouping of the towers. (1) The glorification of the tower reaches its highest pitch in Germany. Six towers are found at Speyer, Worms, and Laach, seven at Limburg. (2) In Burgundy the magnificent tower group of Cluny seems to have remained without a rival. Its daughter churches were satisfied with a triplet; an octagonal central tower and two square western towers was the favourite arrangement. The towers have several stages, similar in form. (3) In Normandy also the triplet was the favourite, but the central tower was square, and not domed internally. (4) In Poitou the characteristic is the conical spire, "en pomme de pin," which often surmounts the tower. (5) In the Périgordian region is seen the same conical spire, together with the characteristic cupolas. (6) In Provence "a simple square tower is common, with a very low spire." But some have central octagons. (7) In Auvergne a specially characteristic arrangement is that of a square western tower in the centre of a façade and a central octagon. (8) In Northern Italy the campanile type greatly predominates, and where the massive Romanesque tower is found, it is usually divided (in campanile fashion) into very numerous stages. Nowhere, except in the Como churches, does the campanile form part of the structure of the church; often it is quite detached.

Summary.—We may discriminate the following eight schools of Romanesque:—I., the Périgordian; II., the Poitevin; III., the Provençal; IV., the Auvergne; V., the Burgundian; VI., the Norman; VII., the German; VIII., the Lombardic.

As regards the above classification, one word of caution is necessary. In speaking, *e.g.*, of the style or school of Auvergne, it is not meant that all the churches in Auvergne were built in this style, or that there were no such churches outside Auvergne, but merely that such churches were more common in Auvergne than elsewhere, and may therefore for convenience be described as belonging to the style or school of Auvergne. Also that those features described as characteristic were not invariably found; they were merely those which occurred most frequently.

One is tempted to try to work out the relations to one another of the different schools. Certain resemblances are patent. The superposed aisles link the style of Lombardy to that of Auvergne; German Romanesque is connected with Lombardic on the one hand, and with Norman on the other. But a much more exhaustive classification is necessary before any results of lasting value are likely to be obtained.

Still stronger is the temptation to inquire into the origins of all the Romanesque styles; whether they are derivatives, as some have held, from Provence, or, as others have held, from Lombardy. Such architectural pedigrees are, not as a rule, trustworthy. And there always remains an alternative hypothesis, which seems to have within it much of truth, viz., that the styles were none of them mainly derivative, but that the same problem was engaging all the different regions more or less simultaneously; that the builders of each region were solving it, with some little light, indeed, from their neighbours, but mainly independently, by empirical experiments of their own, aided by the survival here and there of traditions of Roman construction, and by the study of local Roman monuments.

Another caution requisite is that the classification does not cover the whole ground. This is necessarily so. Between each regiou and the next there was always a debatable ground, where two or more styles would be in simultaneous use. Indeed, a "pure" region would be the exception; the greater part of the area of any one country would employ mixtures of style. England is an instance.

It had always been customary, the author believed, to regard the Romanesque of England and Normandy as one. The Romanesque of Normandy, however, seemed to be a "pure" style, and that of England a "mixed" style. While by far the most important factor is the influence of such pre-Conquest churches as Bernay, Jumièges, and the Abbaye-aux-Hommes, we must also attribute some degree of importance, at any rate in the planning, to the highly-developed Romanesque of Auvergne and Burgundy.

AT a meeting of the Election Committee of the Institute of Sanitary Engineers held on the 10th inst. the following were elected as Associates:—S. L. Bartholomew, Clapham; C. E. S. Crawcour, Bray, Ireland; J. Moore, Whitley.

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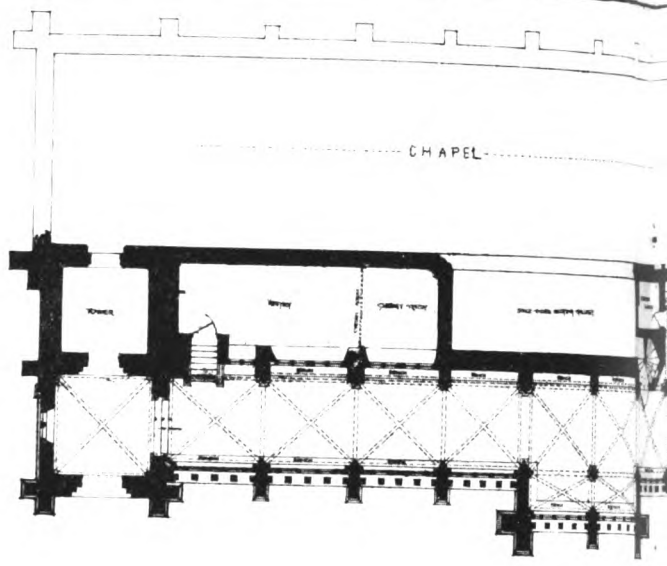

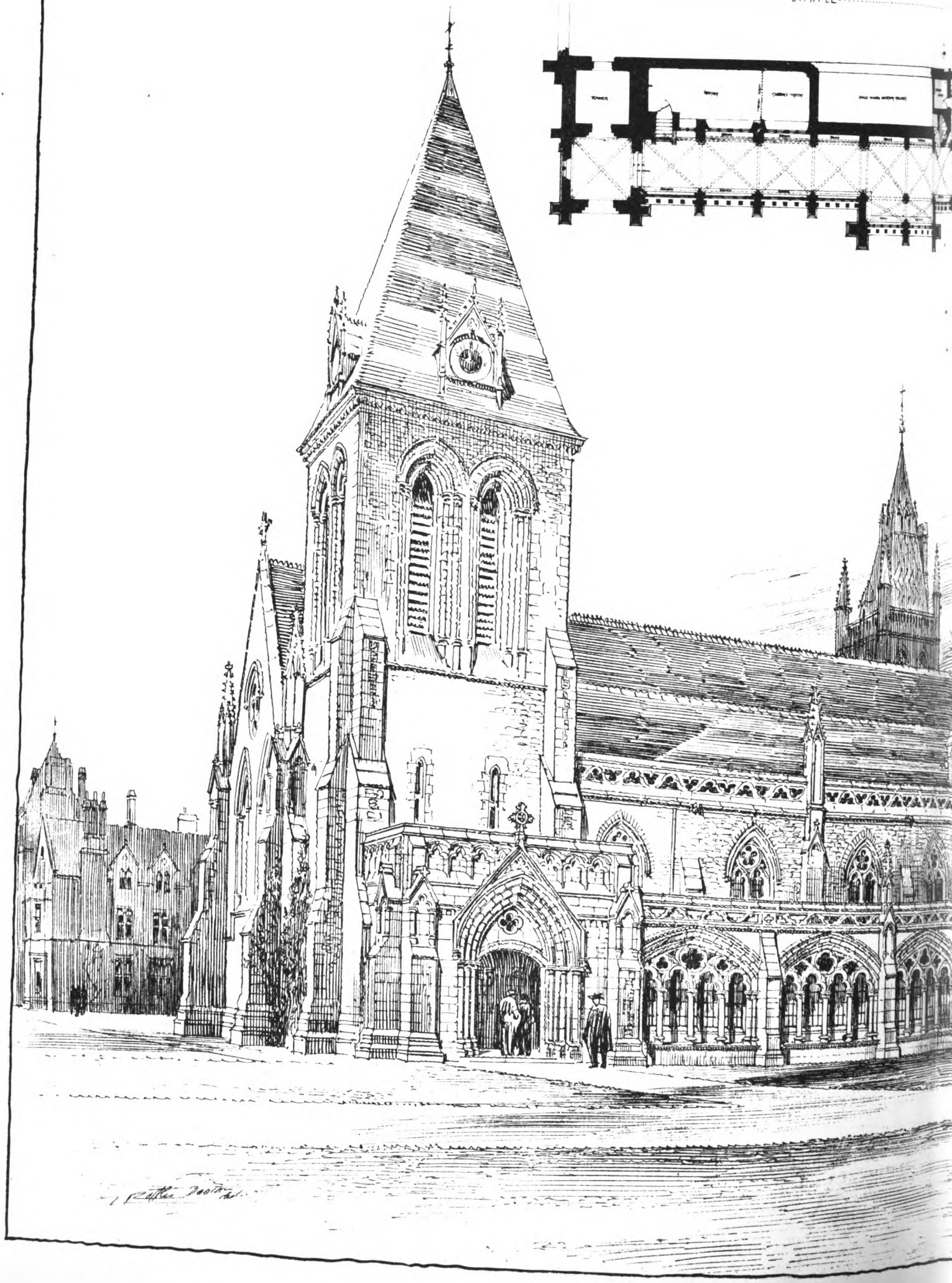

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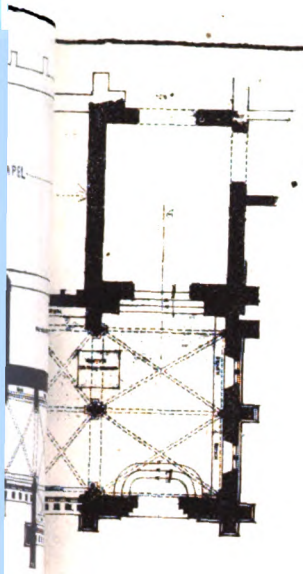
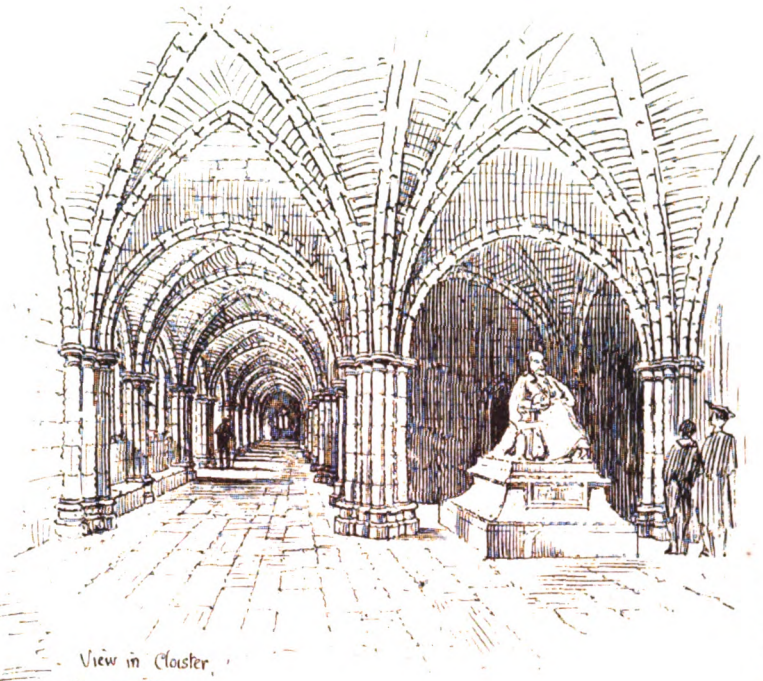
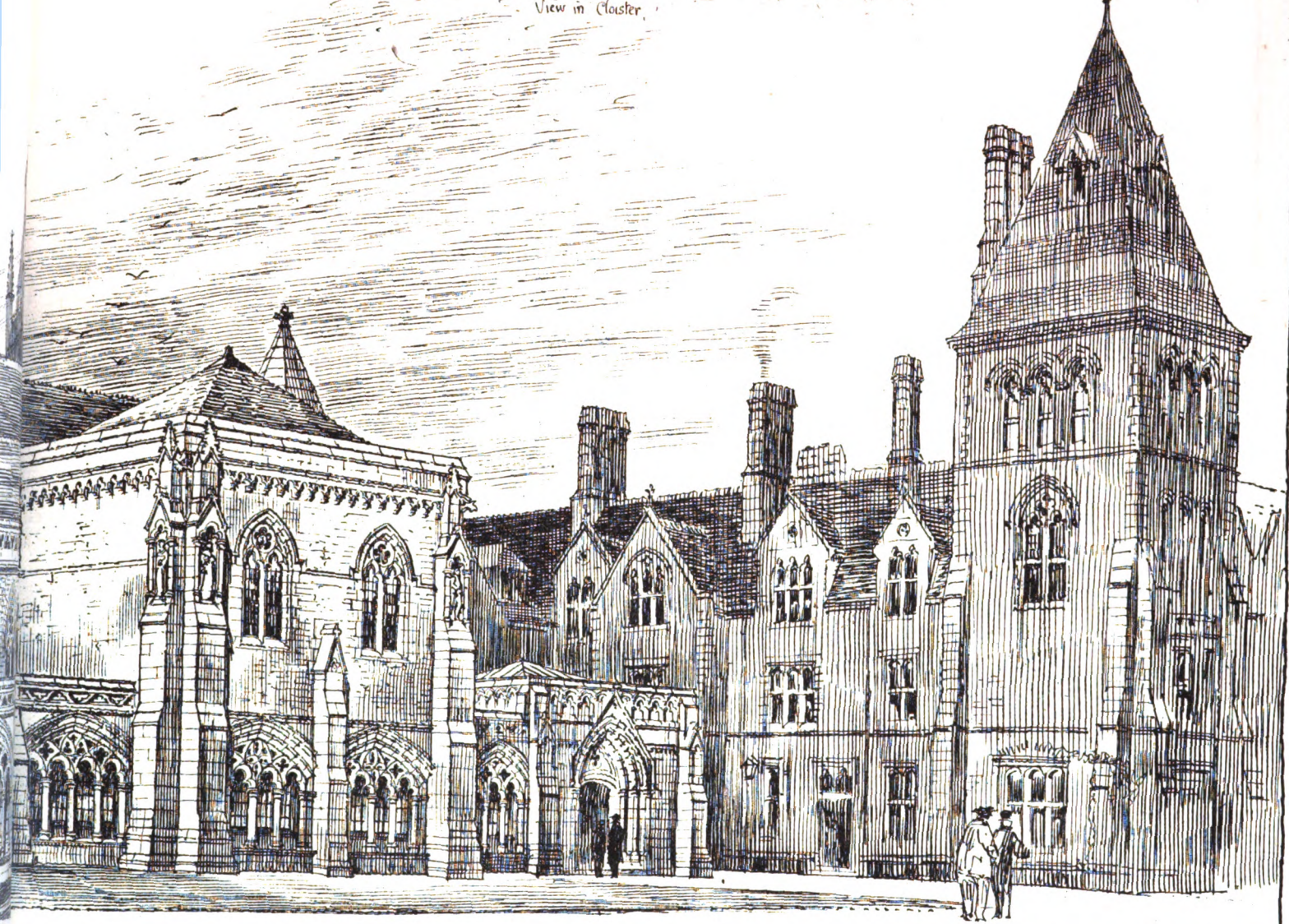




View in Cloister.



Charterhouse School Memorial Cloister etc.
W. D. Caröe Architect

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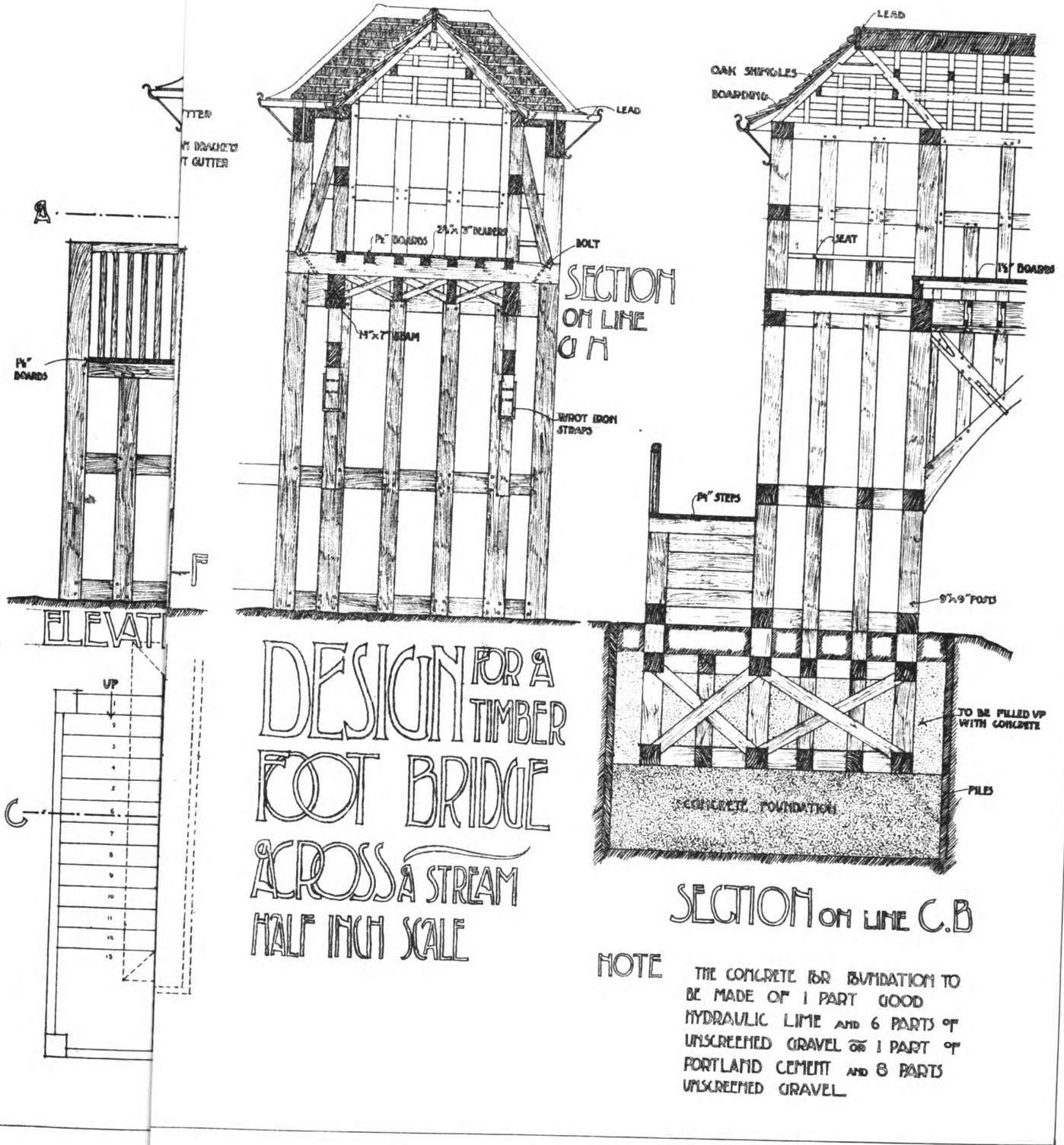

NOTE THE CONCRETE FOR FOUNDATION TO BE MADE OF 1 PART GOOD HYDRAULIC LIME AND 6 PARTS OF UNSCREENED GRAVEL OR 1 PART OF PORTLAND CEMENT AND 8 PARTS UNSCREENED GRAVEL.

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SHEFFIELD SOCIETY OF ARCHITECTS.

THE annual meeting of the Sheffield Society of Architects and Surveyors was held the other evening under the presidency of Mr. Joseph Smith.

Mr. J. R. Wigfull and Mr. J. B. Mitchell-Withers having been elected as Fellows of the society, an alteration of the rules was agreed to, with the view of strengthening the Council. Mr. W. C. Fenton presented the financial statement, which showed that the receipts for the year amounted to £210 10s. 7d., and that there was a balance in hand of £99 4s. 6d., which it was explained would have been greater but for certain arrears of subscriptions. Mr. Fenton afterwards read the 14th annual report of the Council, which stated that the membership was 112, as compared with 109 last year, and detailed the work of the society for the past year.

The Chairman, in moving the adoption of the report, said it showed that the Council had not been indolent. Although they had not proclaimed on the housetops the work they had done for the profession, yet a study of the report would show they had done their very best to serve the interests of the profession and of the city. Mr. P. Marshall seconded, and the report was adopted.

The chairman referred to the limited character of the competition for the National Memorial to Queen Victoria, and called attention to the fact that there is a movement on foot to get the matter altered. Mr. H. L. Paterson expressed the opinion that such a competition ought to be open to the whole of the British Empire, and he moved a resolution that that opinion be conveyed to the Royal Institute of British Architects. Mr. C. M. Hadfield seconded, and the resolution was adopted.

On the motion of Mr. W. J. Hale, a hearty vote of thanks was passed to the officers and members of the council for their services during the year, and in reply the president said it had been a pleasure to him to do his best to serve the interests of the profession. The following officers were then elected by ballot:—President, Mr. Peter Marshall; vice-president, Mr. Thomas Winder; treasurer, Mr. Frederick Fowler; secretary, Mr. W. C. Fenton; members of the council—Messrs. J. R. Wigfull, R. W. Fowler, C. Hadfield, J. B. Mitchell-Withers, E. M. Gibbs, H. L. Paterson (Fellows), C. B. Flockton, C. F. Innocent, and C. M. Hadfield (Associate members). Mr. Gibbs expressed his intention of retiring, on the ground that new blood was required, and the next on the list, Mr. Edward Holmes, was put in his place.

The president presented the society's prizes to Messrs. H. W. Inott and J. Miller, and it was then announced by Mr. Joseph Smith that in future the society would have a home of its own, arrangements having been made to take a room in the building of the Literary and Philosophical Society.

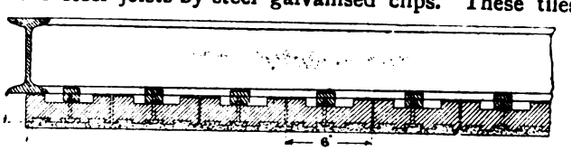
THE BUILDING TRADES EXHIBITION.—II.

FOR general variety and solid interest we do not think the present Building Trades Exhibition could well have been beaten, although it is undoubtedly weak in certain sections. The idea of utilising the minor hall for the purposes of a Fire Prevention Section was an excellent one, and has been exceedingly well carried out under the management of the British Fire Prevention Committee, whose stall at the right hand on entering affords visitors full opportunity for making themselves acquainted with the purposes and work of the committee. This show in the minor hall is a very interesting one, and must be counted as a genuine success. Such exhibitions are, as we know of our own personal experience, difficult to organise, but the Fire Prevention Committee have succeeded in getting together a very creditable display.

The system of covering mesh wire with fire-clay and baking it, so as to form a terra-cotta mesh, which we have referred to on a previous occasion, is shown by the Mural Decorations Company. In this way, used as a first covering for iron columns and the like, a particularly effective key for the concrete or plaster covering is afforded. Amongst the special uses here demonstrated to which it may be put is that of the formation of light and exceedingly tough partition walls, as also a useful form of dome construction. Its application for ceiling work is also shown.

The New Expanded Metal Company, Limited, exhibit in this section a full-size example of their patent steel channel and concrete ribbed and expanded metal concrete floors, which are now being extensively adopted for warehouses and factories. Floors thus constructed are not only of great strength and efficiency, but will be found to be economical in cost. A large photograph is also shown of the floors of the works of Sir W. G. Armstrong, Whitworth & Company, at Elswick Works, Newcastle-on-Tyne, built upon this system. The span between main girders in this case is 20 ft. 6 ins., the floor is designed to carry a safe working load of 10 cwt. per super foot, and yet the total weight of the floor does not exceed 60 lbs. to the super foot. The great strength and rigidity in these floors is due to the fact that the steel channels are arched to the rise of the main girders, and that their haunches are filled with concrete to the level of the floor proper, which consists of expanded metal and concrete to the thickness of 4 ins., all being erected simultaneously. The expanded metal tension bond is embedded into the underside of the 4 in. of concrete, and is co-extensive with the whole area of the floor and above the main girders, thus preventing the liability of cracking of the concrete when unequal loads are imposed upon it. The company also exhibits their new solid partition which is built wholly of expanded metal and cement, and erected by means of patent adjustable temporary studs, obviating the necessity of any permanent heavy sections of metal remaining in the walls to expand or destroy the partition when subjected to severe heat. Great rapidity and economy of construction is claimed as the result of the use of these patent studs, as they avoid the necessity of taking any measurements for the height of the partition, and they adjust themselves between the floor and the ceiling irrespective of height by means of a locking device which is carried on the studs. The company have also a stand in the main hall where the various applications of expanded metal for other than fire-resisting purposes are excellently demonstrated in a practical way.

One of the more recent methods of fire-resisting floor construction is that exhibited by Messrs. A. W. Green and Co., 35, Gorst Road, Wandsworth Common, S.W., in the Fire Prevention Section. This system has evidently been most carefully considered and worked out. In the first place the question of the clay most suitable for effectively resisting the usual effect of the application of water when the clay is at a high temperature was taken into account. Eventually one was discovered which, after being carefully milled, satisfactorily fulfilled this all-important requirement. This clay alone is used in the manufacture of the tiles which enter into this method of construction. So this first essential of a really fire-resisting material is thus provided for. In regard to construction, the patentee has been wise enough to distinguish between the needs of a warehouse and the requirements of a dwelling-house. For the former he gives us a hollow tile floor, in which the hollow lintels are slotted through at each end, so as to bear upon the bottom flanges of the rolled steel joists, fixed 2 ft. apart, which, therefore, become encased and protected from exposure to fire. Then the hollow lintels are keyed into each other, and a deep dovetail groove runs along the top surface of each lintel, forming a very strong key for the concrete, which, when set, also supports them, making their falling out an impossibility, even if accidentally fractured. This is a very important consideration. For dwelling houses and flats we have a 6-in. by 1½-in. flat tile floor. In this the tiles are secured to the steel joists by steel galvanised clips. These tiles



TRANSVERSE SECTION C

are first placed in position, and act as a permanent centreing for the concrete filling, thus avoiding the cost and inconvenience of providing temporary centreing. The underside of the tile is dovetail-grooved, to receive the ceiling plaster. In a solid floor of this description (recom-

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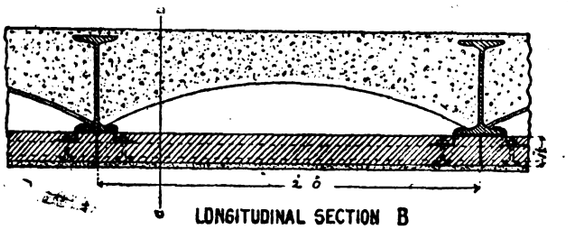
mended for hospital use, owing to there being no hollow spaces to harbour infectious organisms) the upper side is also dovetail-grooved, so that the whole mass is completely and properly bonded together. If, however, a perfectly solid floor is not considered necessary, and a lighter construction is desired, the floor concrete can be arched between the joists, and the hollow segmental space thus formed between the floor concrete and the flat ceiling



LONGITUDINAL SECTION B

tiles can be used for wires, pipes, etc. One or more ceiling tiles can be easily removed by turning the clip round, and so avoid disturbing a mosaic or wood block floor above in order to rectify any defect in the wires or pipes, should one arise. It is claimed that by the use of these tiles a considerable saving in cost with regard to efficiency is obtained over solid concrete construction. It has been found by experiment that a solid concrete floor must project 2 in. below the lower flange of the steel floor joists, in order to protect them from fire, and so render such a floor worthy of the name of fire-resisting. The flat tiles take the place of this concrete, and, doing away with centreing at the same time, the resulting floor is more efficient, with practically no increase in cost. We commend this new method of fire-resisting floor construction to the notice of our readers.

We hold over our notice of the Columbian Fireproofing Company's exhibit till next week, in order that we may be able to illustrate it.

The British Uralite Company, Limited, exhibit samples of their "Uralite," a material which is composed of asbestos fibre and mineral substances only. It is made up into the form of thin sheets, and so far as one can judge from severe tests applied in the exhibition is absolutely fireproof. Of the qualities and capabilities of uralite the patentees claim that it is a non-conductor of heat, cold, and electricity, is practically waterproof, not being affected by hot or cold water, by atmospheric influences, or deleterious gases; it can be cut with a knife or saw; it can be painted, grained, polished, and glued together like wood; it can be veneered to form panelling for walls or partitions for ships' cabins or for railway carriages, and will not swell, crack, or blister; it does not split when a nail is driven through it; it is not affected when exposed to moisture or very great changes of temperature; and it can be impregnated throughout with any desired colour. The material is shown here as applied in a variety of ways for the protection of interiors of buildings from fire. It can be used in lieu of matchboarding or plastering, or can be used for covering a door, and otherwise as a fireproof lining. Its application in the construction of temporary buildings is capitally demonstrated in the good-sized erection in the main hall. This is completely covered with uralite slabs, or sheets, held in place by clips. The interior also shows the application of the material as a veneer, or lining, in which its capacity for decoration in the way of painting, graining, and polishing is excellently shown. Altogether "Uralite" is a very interesting material for architects and their clients to take practical notice of.

A fireproof system of construction which has found considerable favour is the Mack patent fireproof and soundproof slabs and blocks, of which Messrs. J. A. King and Co., 181, Queen Victoria Street, are the manufacturers. The slabs are light, being composed of specially prepared plaster, and having a number of hollow reeds running through them, and also vertical holes running through them 1⅛ in. diameter and ¾ in. apart. The upper side of blocks have a convex and the lower side a concave joint; when building one course above the other, the lower side of the upper course keys into the upper side of the lower, the joint being made by running plaster down the vertical holes. The ends of the blocks are also concave, so that when the blocks are butted together a hollow joint is formed, and this is grouted with plaster. Partitions formed of these slabs are not only light, but solid and sound throughout. A 2¾ in. partition, built up of these slabs, was tested under the direction of the British Fire Prevention Committee, and came out of the severe ordeal of fire and water successfully. We might mention that the slabs have been used in the new Stock Exchange buildings, E.C.; the new Dental Hospital, Leicester Square; the new Waverley Station Hotel, Edinburgh; Covent Garden Theatre; the Chiswick Town Hall; Guildhall Buildings, Birmingham; Star and Garter Hotel and Mansions, Putney; Hotel Majestic, Harrogate, etc.

The London Fireproof Plate Wall Company, Limited, exhibit their fire-resisting slabs which they call plates. The slabs or plates are composed of a substance of the nature of fibrous plaster, and are usually some 26 in. long by 20 in. broad, and 2½ in. thick. We fully described the manner of building up these slabs in our issue of September 1, 1899. Exactly in the middle of each plate there is formed a vertical through passage G, and on each side a number of air chambers H, which do not pass through the whole height of the plate. Horizontally the plates are jointed together by a fillet on the one plate taking into a groove of another plate. As each row is placed in position the plates are jointed with cement, and liquid cement is poured down the vertical passages, filling up those which are open, ascending those which are closed, so far as the compressed air will allow, and filling up the horizontal joints in their entire length. If extra stability is required, or in cases where the wall is required to be of greater dimensions than usual, iron rods or tubes are cemented into the vertical passages extending through the whole height of the wall at such distances as may be considered desirable according to the requirements. These when fixed at their top and bottom ends, are tightened up by means of a right and left-handed screwed socket engaging correspondingly-threaded parts of the tubes. Amongst the many advantages claimed for these walls we may mention:—1. The ease and rapidity with which they can be erected, as no plastering is required. 2. Economy of space: the walls when completed are only 2½ in. thick. 3. They are perfectly fire-resisting. 4. They are practically soundproof. 5. They are very light—a completed wall weighs about 1 cwt. per square yard, but the weight can be taken off the floor entirely if necessary. 6. The great size in which they may be erected. 7. Their sanitary qualities—the absence of open joints or superficial cavities makes them impervious to germs or vermin, and renders them especially valuable for hospital construction, hotels, schools, flats, barracks, factories, warehouses, baths, dwelling-houses, etc. Walls constructed of these plates have been erected in many hotels and commercial buildings in London, Manchester, Leeds, Southport, Cardiff, Stockport, Harrogate, Blackpool, etc., and many very satisfactory testimonials have been received from architects and owners of buildings in which they have been used.

The British Luxfer Prism Syndicate, Limited, have their principal display in the main hall, but they show in the Fire Prevention Section specimens of their electro-glazed fire-resisting luxfer prisms, electro-glazed fire-resisting clear glass in quarries and designs. An interesting feature is the application of a strong gas flame to a piece of this electro glazing, which shows itself to be practically unaffected by the heat, as also by the water, with which it is afterwards douched. We have ourselves seen a much severer test applied than is here shown, and with perfectly satisfactory results. Besides which, the tests which were some time ago applied under the direction of the British Fire Prevention Committee fully demonstrated the fire-resisting qualities of the glazing. We fully described the Luxfer lights and electro-glazing at the time of the last Building Trades Exhibition. But we might, perhaps, mention that the electro-glazing is the process of mounting or uniting glass by copper electrically deposited instead of using lead and cement, and it can be applied to any kind of glass (plain, prismatic, or coloured), and can also be executed in any design. The great value of a window glazing which is really fire-resisting need hardly be urged. The general display of the Luxfer specialities in the main hall make a most interesting show. For lighting dark rooms or basements the application of luxfer prisms in one form or another will be found eminently satisfactory. We have ourselves seen a wonderful amount of daylight transmitted by these prisms into very dark basements. The

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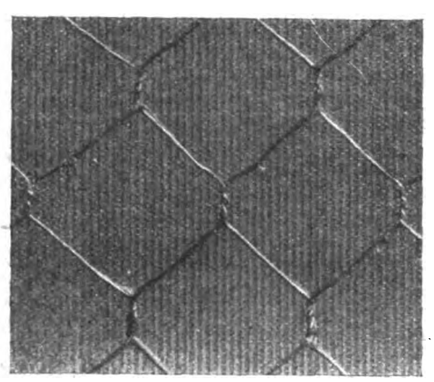
electro-glazing can be executed in any design, and some neat and effective outlines are shown, demonstrating its capability of being treated in an artistic manner.

The Fireproof Partition Syndicate, Limited, show a small building made up of their patent dovetail corrugated iron sheets, which can be plastered or otherwise covered. The dovetail corrugation forms a splendid key for the plaster, and being without perforation, there can be no passage of fire even though the plaster falls away. The firm also show the application of these iron sheets to floor construction in a very effective and economical manner. They also have a larger building erected in the main hall, where the important and varied ways in which the material can be used for constructional purposes is excellently demonstrated. The list of executed works is a long one, and includes a large number of well-known buildings in London.

The "Shepwood" patent partition brick is shown by the Shepwood Company, Lindisfarne, Walton-on-Thames, of which Mr. F. Dashwood is the proprietor. These bricks, which have hollow spaces passing vertically through them, are so designed as to effect a great saving in weight and space. A partition wall built up of these bricks has a finished thickness, when plastered both sides, of only 2¾ in., and yet is perfectly rigid and solid in construction.

Messrs. Pilkington Bros., Limited, exhibit a large number of samples of glass of all kinds—sheet, polished plate, patent rolled and rough-cast plate, ornamental window glass, patent prismatic rolled, cathedral and photographic glass, etc. The most interesting exhibit



from a fire-prevention point of view is the patent wired rolled glass. This, as is shown in our illustration, is made of rolled plate glass, in the centre of which wire netting of about one inch mesh is embedded. The result is that the wire and glass combine so effectually that if the glass be broken by a blow or other shock, or by fire, the pieces do not fall out, but the surface remains practically intact, and in the case of fire offers the same resistance to its passage as before. In a recent instance in which it was severely tested, the glass in a skylight bulged inwards by the heat held the water poured upon it until the water boiled away. Fixed in a suitable non-combustible frame it is an effectual barrier to the passage of fire, and has been severely and satisfactorily tested in this respect. Indeed, visitors have occular demonstration of the fire-resisting qualities of the material in the experiments shown at the stand. In regard to other accidents also this wired glass is of real service. It prevents the passage of stones and other missiles through the glass, and also offers considerable opposition to the burglars usual method of cutting through a window.

Of very special interest to architects is the fine show of Messrs. Hobbs, Hart & Co., a prominent feature of whose exhibits is the party wall door, a ponderous piece of mechanism which can be moved to and fro with wonderful ease and freedom. This door is so constructed that it works into a rebate on all its sides, constituting a perfectly sealed door. They also exhibit fire-resisting and ventilating lintels for strong room doors, fire-resisting strong room doors, and fire-resisting safes. A noticeable invention, however, is the panic bolt here shown in action. A sudden push against the bar of the bolt, which projects from the door, releases the bolt which works in a slot with a downward movement. This bolt works with great simplicity and certainty of action. Another novelty is the "New Century Night Latch." This is a latch which has been specially designed for use with a key only 1⅞ in. in length. The usual lengthy latch key is thus dispensed with, and a small key can now be used. It has been a difficult matter, we believe, to secure so small a key to act efficiently in such a lock, but this has now been done, and a most useful and convenient form of latch is the result. One other feature at this stand should be noted, and that is the parchment safe, which is a specially chemically treated wooden safe placed within the usual safe so as to preserve the parchments from the destructive chemical action set up when the outer safe is exposed to high temperature. This stand of Messrs. Hobbs, Hart & Co. is a most interesting one.

Not the least interesting stand in the Fire Prevention Section is that of the Asbestos and Asbestic Company, Limited, who exhibit their Danville Asbestic Plaster in its raw and manufactured state, together with photographs of a few of the buildings in which it has been used. That this "Asbestic" is a material of really fireproof qualities those who see it cannot but believe. It is simply a serpentine rock carrying a large percentage of asbestos, pulverised and mixed with good cementing materials. It has had a very large sale in the States, and has also been very extensively adopted in this country, amongst the many architects who have used it being Messrs. Aston Webb, W. D. Caröe, Sydney Mitchell and Wilson, J. Macvicar Anderson, Saxon Snell, Rowland Plumbe, and Dr. Rowand Anderson.

The hollow bricks manufactured by Eredi Frazzi, Cremona, Italy, and for which Mr. Arthur E. Brown, Essex Wharf, Durward Street, Whitechapel, is the sole representative for the United Kingdom, are shown in the Fire Prevention Section, in the form of sections of floors built up of these bricks. The material is of excellent quality, and the bricks are light and of great strength. They have been awarded gold medals at various exhibitions, including the Paris Exhibition last year, and they secured a Grand Prize at the Exhibition of Hygiene at Naples last year.

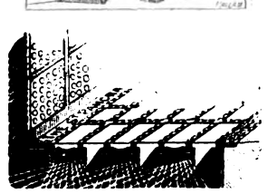
The Non-Inflammable Wood and Fabrics Company give a very practical demonstration of the fire-resisting properties of the wood and materials treated by their process.

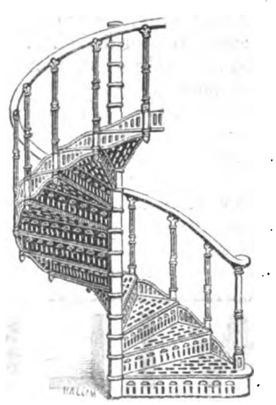
The Crittall Manufacturing Company exhibit a number of specimens of their fire-resisting doors, wrought-iron sashes, casements, casement sections and fittings, and ornamental wrought-iron work.

Fire blinds, which have passed a severe test applied by the British Fire Prevention Committee, are shown by Messrs. G. A. Williams & Son in a variety of forms.

Messrs. F. McNeill & Co. exhibit a large variety of their well-known felts for various purposes, damp-course materials, patent pipe coverings, silicate cotton, etc. Models showing the practical application of these materials are also on view.

The St. Pancras Ironwork Company, Limited (Row B, Stand 58), make a most attractive display of their well-known specialities. They exhibit the model of a stable with their patent improved stable fittings, for which they have so long and well founded a reputation. They have





also on view a large assortment of prismatic pavement lights, stall boards, cellar flaps, coal plates, and other basement lighting devices, of which they are patentees and

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large manufacturers. At the back of the stall are a number of spiral and straight iron staircases, and among others they show a specimen of their fire escape staircase, which meets all the requirements of the local authorities, and is at once oth cheap and effective. They exhibit photographs o some of the more important works of this kind which they have carried out, and others of well-known stables which they have fitted.

Aspinall s Enamel, Limited (special position, No. 10) have a most interesting exhibit in the form of a small villa model, decorated inside and outside with their enamel, the quality of which is well known. This enamel has a brilliant gloss and is most easily worked. They also manufacture a sanitary washable distemper, sold under the name of "Wapicti," which can be had in an apparently unlimited range of tints, and is therefore very valuable for interior decoration. Samples of stains, varnishes, etc., are also shown at this artistically decorated stand.

Maughan's Patent Geysers Company, Limited (Bay 10) make a good show of their specialities, which includes the newest forms of their patent geysers, sanitary baths, etc.

Messrs. H. G. Goodwin & Son (Row A, Stand 37) exhibit a varied selection of architectural joinery, mouldings, etc., together with samples of compo board. The joinery work shows care and finish in its production. The varied and excellent qualities of compo board have already been described in our columns.

At the stand of the well-known firm of Messrs. Hodkin and Jones (Row F, No. 118) may be seen examples of their concrete masonry, which for evenness of texture and uniform colour can hardly be surpassed. Being practically imperishable and fire-resisting, and also affording facilities by which large orders can be executed, and a finished article supplied at a remarkably low price, we can quite understand that it has gained for its manufacturers a very wide reputation. This firm also executes all kinds of mosaic and terazzo work, of which several excellent specimens are shown.

Mr. John Tann makes a very excellent display of his "Anchor Reliance" and other safes. The "Anchor Reliance" safes have outer bodies made of best steel plates ½in. thick, but solid at the corners, and strengthened at the front by a steel T-frame in combination with a patent continuous interlocking wedge-resisting arrangement. The doors are of solid steel plates ¾in. thick. The party-wall doors shown here are recommended by the Fire Insurance Committee; they are panelled on both sides with 3in. by ½in. bars, the plates being of steel ½in. thick.

Messrs. Clark, Bunnett & Co., Limited (Bay 12), show an electric passenger lift made for Messrs. Spencer, Santo and Co., for installation at 50, Cannon Street. This is not a working model, but the actual lift itself. They also exhibit specimens of their well-known shutters, staircases, and general ironwork.

Messrs. Shanks Co. (Bay No. 1), as usual, have a most attractive stand, which includes baths, lavatories, closets, urinals, etc., all possessing the same high-class finish. This firm has gained a very high reputation for this class of goods.

Messrs. Mintons, Limited (Row C, No. 62), have an attractive exhibit of tiles, which has, we are sure, proved of real interest to architects during the exhibition.

An artistic, if somewhat small, show of tiles is made by Messrs. Carter & Co., of Poole (Row E, No. 112). This firm also exhibit some good examples of mosaic ceramic and faience.

Messrs. G. Tucker & Son (Row E, No. 132), as usual, make a good show of their excellent red and buff terra cotta and red pressed facing bricks and roofing tiles.

Bank's Fireproof Construction Syndicate Limited (Row A, Stand 13), exhibit the application of their patent helical metal lathing to the purposes of fireproof and other and other construction. This lathing is strong and light, with an excellent key.

An exceedingly good show of architectural terra-cotta is made by Messrs. Gibbs & Canning (Row C, No. 60A), whose high reputation in this class of manufacture is well sustained in the samples exhibited.

A fine show of safes, etc., is made by the Ratner Safe Company, Limited, at Bay No. 9, together with their specialities in party-wall doors. The firm exhibit the safe recently opened by post-office burglars by means of oxyhydrogen gas, and which has been replaced by one of the company's "twelve-corner-bent" solid steel safes, in which all its twelve corners are bent out of one solid piece of steel. This type of safe is a fine specimen of mechanism and manufacture.

Messrs. Dellagana & Co. (Row C, No. 74) exhibit their new metallic decoration, an illustrated description of which appeared in our columns just recently.

At the stand of the Express Contract Company, Limited (Row F, special position 5), may be seen the well-known "N. A. P." windows, with the latest improvements; also several examples of the Gasor coal stove are shown by the same firm.

In sanitary goods, Mr. George Jennings makes a specially fine display, and another good show is that of Mr. W. E. Mason, of builders' ironmongery. Messrs. Yates, Heywood and Co. and Messrs. Ashton and Green have two fine shows.

Messrs. Medway & Co. (Row B, Stand No. 56) show a hand-power, self-sustaining dinner lift, and an electrically-driven lift, both in working order. In connection with their hydraulic lifts, the patent hydraulic starting valve should be especially noted. This has been designed to overcome the deficiencies of the slide valve, and economise time and expense. It can be fitted to existing lifts or cranes. There are no metal faces to wear, and the body of the valve is all in one piece, and so never requires to be removed.

Messrs. John Knowles & Co.'s (Row C, No. 83) exhibits include the "Anti-Vap" street gulley (patent), the "Wyvurst" patent improved drainage channels, the "Aquarius" wash-down closet, and a large assortment of other sanitary goods.

The Acme Wood Flooring Company, Limited, have a very prominent stand (Nos. 9 and 10) in the gallery, where they show specimens of wood block flooring in maple, oak, teak, Jarrah, Kauri pine and other woods laid on the well-known W. Duffy's "Immovable-Acme" principle, which has gained such well-merited appreciation amongst architects. The Dgffy method of street paving is also shown together with planks of well-seasoned hard woods. Amongst other exhibits in the gallery, which are of special interest to architects are those of Messrs. Defries & Sons, Limited, The Hopton Wood Stone Company, Limited, and the Albion Clay Company.

Messrs. Norton & Gregory exhibit in the gallery a new black line process, which appears to us to give most excellent results. The lines are really black, even the finest, and we are told are absolutely permanent. The paper will not discolour under the action of light, and it can be readily coloured if required. Another good feature is that erasures and alterations can easily be made without the use of acids. The prints, it is to be noted, are always clean even when taken from old, cracked, or dirty tracings.

The Granite Silicon Plaster Co., Ltd. (Row B, No. 47) have a plaster which is intended to take the place of lime and hair plastering, and a special feature is its quick setting, and, when set, it is very hard and lasting.

Messrs. D. Anderson & Son, Ltd. (Row C, No. 69) show a large number of samples of their well-known felts, silicate cotton, etc.

Messrs. Ewart & Son, Limited (Row A, Nos. 20-1-2), make a good show of their various well-known patent geysers and agate porcelain enamel baths.

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ARCHITECTS ARE DESIRED TO SPECIFY WILLESDEN 2-PLY.
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The British Architect.

LONDON: FRIDAY, MAY 3, 1901.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.—Examinations will be held on the following dates:—

The PRELIMINARY EXAMINATION on the 11TH and 12TH JUNE, 1901. Applications must be sent in on or before the 4TH MAY.

The INTERMEDIATE EXAMINATION on the 11TH, 12TH, 13TH and 14TH JUNE, 1901. Applications must be sent in on or before the 4TH MAY.

The FINAL AND SPECIAL EXAMINATIONS from the 21ST to 28TH JUNE, 1901. Applications must be sent in on or before 24TH MAY, 1901.

The Testimonies of Study, &c., with the necessary fees, must accompany the applications, all of which are to be addressed to the undersigned.

W. J. LOCKE,
Secretary R.I.B.A.

No. 9, Conduit Street, London, W.

THE ROYAL ACADEMY EXHIBITION.—I.

THE ARCHITECTURAL GALLERY.

THIS year is a disappointing one, there seems to be nothing at all of first-rate importance to chronicle in the architectural display, and the hanging committee have acted fully up to their reputation—in fact a little above it. There are no models, and even the walls are not so full as they might have been.

We welcome the appearance of five frames from Mr. G. F. Bodley, A.R.A., who has latterly shown us far too little of his practice. On the west wall he has three fine interior views of churches excellently drawn in colour, one little pencil sketch of a house, and a sepia view of a church tower.

The three interiors are of Gothic churches at Ecclestone Chapel, Allerton, and Kensington, they are all of a dignified and somewhat stately type of Gothic at its best. There is nothing strikingly fresh either, but in each design one is impressed by the adequate adjustment and agreeable proportion of parts, and with the rendering of one English Gothic in its best manners. The Hayes Lodge at Morley, Derbyshire, is a picturesque stone house. The great square tower to Long Melford Church, will be a stately addition to a very fine old church.

Mr. T. G. Jackson, R.A., sends a large frame of tinted elevations of his new buildings for the University of Cambridge, which include the Sedgwick Museum of Geology, the Squire Law Library, Law School, and Archæological Museum. There are in the work indications of Mr. Jackson's great ability, but we somehow feel that he is becoming less robust in his style, and does not let himself go enough. The domed turret and entrance doorway with outside stairs to the Sedgwick Museum, make up a picturesque group.

Mr. Aston Webb, A.R.A., sends one drawing, which will be very welcome to the profession, a tinted elevational detail (to half-inch scale) of a portion of the Victoria and Albert Museum frontage. The drawing shows that interesting detail will not be allowed to detract from the general breadth of effect, and that in many respects a happy medium has been hit between a severe type and a rococo one. It indicates great promise of a good result. There are, perhaps, few living architects who can so well combine some interest of detail with dignity of general effect. In one other contribution, the sick quarters of the Britannia Royal Naval College at Dartmouth, Mr. Webb shows how well he can handle a practical problem in a picturesque way. This will certainly not be one of the least satisfactory parts of this great group of college buildings. Mr. George Aitchison, R.A., exhibits 44, Mark Lane, London (offices), an excellent tinted drawing of a building, which we suppose has been erected a long time since. Mr. John Belcher, A.R.A., makes two excellent contributions—a dainty water-colour drawing of a salon in a chateau at Wimereux, and his large sepia perspective of his design for the Old Bailey Sessions House, a fine drawing of a bold and effective design.

Mr. Mountford's accepted design for the Sessions House, and Mr. Baggally's design for the same are shown in Nos. 1611, 1608, and 1612. It is quite a relief to turn from these well-thumbed types to the tinted elevation of a design for a public building in a hot climate (1605), by Mr. J. Coates Carter. This well grouped design has a pleasant touch of oriental feeling combined with some of the reticence and sobriety of our Western methods. Mr. Wm. Henman's novel hospital scheme at Belfast is illustrated by an elaborate water-colour drawing (1595). The wards in this plan do not add very much to the architectural quality of the design.

The President of the R.I.B.A., Mr. W. Emerson, sends a large water-colour drawing of the Royal Caledonian Orphan Asylum, Bushey, Herts. (1584), in which the long quiet lines of building tell very agreeably. Mr. Halsey Ricardo has a vigorous conventional brown ink drawing of the joint terminal station of the East Indian and Bengal and Nagpur Railways at Howrah, Calcutta (1588). It is an admirable piece of design.

Mr. Collcutt's "Building for Lloyd's Register of Shipping" once more appears, this time capitally illustrated in perspective. As we have before remarked, this will be one of Mr. Collcutt's best efforts. In 1560 and 1589 we have Mr. Ernest Runtz's picturesque design for the New Strand frontages, including the Gaiety Theatre building and *Morning Post* offices, and 1561, cleverly illustrated by a vigorous monochrome. Mr. W. Flockhart's design for the same scheme also attracts notice. A large commercial building, by Messrs. Davis & Emmanuel, occupies a frame (1569) on the east wall. It is called Salisbury House, and may be found in Finsbury Circus. As we shall be able to see it there, and have many buildings like it, the Royal Academy Hanging Committee have put it up here for three months.

Mr. W. D. Caröe makes four contributions to the gallery, which uphold his well-known reputation as a church architect. His Stoke Damerall (Devonport) church, with its picturesque adjoining rectory, promises a fine architectural addition to the south country. The Chapel to the Bishop's Palace, Liverpool (1546), and Church of St. John, High Wycombe (1547), are further proof of his versatility.

We cannot say much for the sculptor's contribution to the architectural gallery this year. Mr. Thorneycroft's bronze canopy, part of memorial to Dean Colet at St. Paul's School, is not bad in idea, but the detail seems to be of the worst of modern Gothic. It would soon be put right with the collaboration of, say, Mr. Bodley or Mr. Jackson, and then make a really creditable affair. One of the really able things in the Academy this year is Mr. Beresford Pite's "Memorial Bridge" (1672). A design something like this would form really no obstruction on a great city bridge, but only help to keep the traffic in line. How contemptible our Thames bridges seem when we think of schemes like this! Another scheme with some poetry in it is the North London Crematorium in Finchley Road, by Messrs. Ernest George & Yeates, which, with its round arched cloister bell tower and little domed pavilion, make an admirable group.

THE SCULPTURE.

Sculptors are every year making stronger claims on our sympathies. We shall be getting quite to look forward to their works at the Royal Academy if they develop at their present rate. In the Lecture Room there is much of special interest. "The Crucifix" (1792) by John S. Sargent, R.A., is a fine decorative piece, in which symbolism may, however, have been rather carried to an extreme. Mr. F. Lynn Jenkin's metal and ivory frieze (1791) needs to be seen in its surroundings to be properly estimated. It looks somewhat fussy here, but when framed into the marble walls of Mr. Collcutt's building for Lloyd's Registry, it will probably supply useful points of detail and light. Much admiration will be felt for "The Puma and Macaw" (1818) of Mr. J. M. Swan, A.R.A. Another noticeable thing is Mr. Frampton's capital little figure of Edward VI. (1816), to be executed in bronze for Giggleswick School, Yorkshire.

The "Glory to the Dead" statuette (1821), by E. Onslow Ford, is a refined and beautiful female figure holding forth a wreath. She is mounted on a cleverly-designed base and pedestal. Mr. W. R. Colton's "The Wavelet" (1823) is an excellently designed piece, and "Castles in the Air," by W. Reynolds-Stephens (1819), is a charming work—a girl seated on high pedestal with a book, and metal canopy behind. We should expect great appreciation of Mr. Onslow Ford's fine "Memorial to Queen Victoria" to be

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erected in Manchester (1711). There is decided grandeur and dignity in the seated figure. An exquisite little figure in the Central Hall is Mr. Albert Toft's "Spirit of Contemplation" (1694). Near this is also an elaborately decorated bell by Saverio Sortini, which has some excellent points. Amongst the busts the same artist's "La Mère Grégoire" (1752) should not be overlooked. Two capital examples of architectural sculpture are Mr. Schenck's "Summer" (1712) and "Autumn" (1810), which he has done for Mr. T. W. Cutler.

THE R.I.B.A. MEETING AND THE VICTORIA MEMORIAL.

THERE was no hesitancy of opinion or lack of enthusiasm about the meeting held at the Institute on Monday night last to consider the resolutions put forward by Mr. William Woodward respecting the limiting of the competition for the Queen Victoria Memorial to five architects. We confess we were scarcely prepared for the unanimity with which the members present asserted their right to protest against the action of the Executive of the Memorial Committee in the matter, nor yet for the vigour with which they resented the idea, broached by one or two speakers, that they should let well alone. A whisper had reached us that the proposed meeting would be a kind of mild fiasco. Nothing of the kind. The meeting was a large one, the room being well filled, and the spirit and "go" which characterised the proceedings was really quite refreshing. At the same time there was not lacking that proper restraint which confined the speakers to the discussion of the broader issue involved, and ignored personalities and side issues.

The proceedings were opened by the chairman, Mr. E. A. Gruning, vice-president, calling upon the secretary to read two letters, one from Mr. William Emerson, the president, and the other from Mr. Macvicar Anderson. Mr. Emerson's letter was a brief statement to the effect that in considering the question to be brought before the members the executive committee had had three courses of action laid before them—(1) whether one architect of eminence should be chosen for the work; (2) whether there should be an open competition; and (3) whether there should be a competition confined to a few selected architects. The committee adopted the last-named course. Beyond this bare statement of fact Mr. Emerson said nothing. Mr. Anderson's letter was a strongly-worded protest against the passing of the proposed or similar resolutions in the name of the Institute. And he characterised the whole proceeding as undignified and unprofessional. The very last body to deal with the subject, he urged, was the Institute.

After this Mr. Woodward rose to move the resolutions standing in his name, and which we referred to at length last week, We need only repeat the first one of the six, since the others simply dealt with certain matters of detail consequent on the passing of the first. This first resolution set out—"That in the opinion of this meeting the proposed National Memorial to Queen Victoria should be open to the competition of all British—including of course Colonial—architects, sculptors and artists." Having read the resolutions through, Mr. Woodward proceeded to remark upon the national character of the memorial and the fact that the funds to be provided for its erection were to be subscribed by the public at large, and not by Government, expressing his conviction that public opinion was in favour of the competition being an open one. Mr. Woodward scored a good point in his suggestion that the subject being such an unusual one there was really no reason why the five selected architects should know any more about it than any other five architects that might be chosen. If a particular class of building had been in question then the nomination of five architects specially qualified for such work would have been better understood. But in this case they had had no opportunity for testing architects' abilities in this particular class of design. Mr. Woodward also instanced the Paris Opera House and our own Houses of Parliament as notable examples of the result of open competition. Mr. Woodward then moved the first of his resolutions, which was duly seconded.

Then Professor Beresford Pite opened the discussion by moving an amendment to this resolution as follows:—"That considering the deep and widespread interest manifested throughout the Empire in the proposed National Memorial to Her late lamented Majesty Queen Victoria, and in view of the limited opportunities for the exercise of monumental design in London that have been offered during recent years, and the absence of useful precedent, this special general meeting of the Royal Institute of British Architects, of which Her late lamented Majesty was patron throughout her long reign, respectfully urges upon the Executive Committee of the National Memorial its earnest conviction that designs should be invited in open competition from all British architects for this most important and unique monument, which it hopes would thus become representative of the best and most enthusiastic efforts of modern monumental architectural art; and further, this meeting would suggest to the Executive Committee the necessity of affording sufficient time for the preparation and submission of designs by architects resident in all parts of the Empire, of whom many are members of this Royal Institute."

In putting this amendment to the meeting Professor Pite expressed his opinion that the action which the members of the Institute were taking that evening was quite justifiable. The Executive Committee had made a mistake, but were they to assume that an official mistake could not be remedied? The professor instanced the case of an artist being invited to spoil—officially—one of our finest cathedrals, and which formed the subject of very strong protest indeed. He regarded the Executive Committee's mistake as one of judgment rather than of method. In respect to the question of open competition Professor Pite pointed out that it was the abuse of the system which was to be objected to, but he thought competitions had their use, and he also reminded the meeting that the only fine monument of our era—the Wellington Monument in St. Paul's—was the result of an open competition, and but for which the committee of selection would never have chosen this masterpiece of Alfred Stevens. Further than this he pointed out that most if not all of the finest monuments the world had ever seen were the result of open competition.

The amendment was seconded by Mr. H. V. Lanchester, and supported by Mr. Wimperis, who both urged the needs-be for thus protesting against the limiting of the competition to the five selected architects, and strongly maintained the right and propriety of the Institute's action that evening.

There were one or two dissentient speakers, who contended that the passing of Professor Pite's resolution would be both undignified and useless. But the feeling of the meeting was entirely against this idea, and after Mr. Woodward had cordially accepted Professor Pite's amendment, it became the substantive motion, and was passed with only four dissentients, the result being very heartily acclaimed.

We need not discuss the points raised at the meeting further than to say we are in cordial sympathy and agreement with the action taken at the meeting and with the terms of the resolution. As to there being anything undignified in the proceedings, we confess we are at a loss to see it. The meeting was called in due accordance with the Institute's own by-law, and was conducted with the strictest regard to the rules governing the conduct of the ordinary Institute meetings. The resolution was moved by a member of the Council, whilst amongst those present were not a few who could scarcely be considered as mere juniors in the profession. We certainly do not see wherein the dignity of the Institute could possibly be impaired by the passing of the excellently-worded resolution of Professor Pite's at such a meeting as that of Monday night. In fact, so far from stultifying itself, we consider the Institution has, by the passing of this resolution, done a real service to the whole of the profession whether the desired end be attained or not.

AT a meeting of the Election Committee of the Institute of Sanitary Engineers held on the 13th ult., the following gentlemen were elected Associates:—F. Bovey, Holloway; J. Buckeldee, Hillingdon; J. Whittaker, Pleasington. At the examination in Sanitary Engineering held on the 22nd and 23rd ult., the following passed, qualifying for Associateship:—W. J. Lane, Croydon; R. J. McKenn, Manchester.

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SUMMER EXHIBITION AT THE NEW GALLERY.

IT is always pleasant to go into the New Gallery, for the personal comfort of the visitor seems to be a matter of consideration with the directorate. An agreeable departure is the arrangement of a sort of lounge, with reading and writing tables, couches, etc., in the Central Hall, which is always a nice part of the galleries, with its cool atmosphere and rippling fountain.

There is generally some interesting sculpture or modelling to be seen at the New Gallery. No. 445 shows a low relief portrait by the Countess Feodora Gleichen. This is delicately and charmingly modelled. Panels such as this would form excellent features used constructively in a home. Nos. 463 and 464 are charming caskets. The latter is a silver jewel casket by Alex. Fisher, and one of his best efforts. It is hexagonal in shape and contains on each face a transparent enamel illustrating the story of Cupid and Psyche. They are exquisitely produced in greens and blues and gold. An admirable silver cup is also exhibited by the Countess Gleichen, which is at once bold in design and graceful and dainty in execution. A reduction in bronze of Mr. W. R. Colton's "The Girdle" is No. 448; and Mr. F. W. Pomeroy's "Snake Charmer" (447) is another successful bronze. A most charming little illuminated miniature (404), by Miss Jessie Bayes, should not be overlooked. Mr. F. M. Taubman's "Blanche" (460) is a refined and effective bust.

In the West room Mr. Geo. Wetherbee's "Pool of Diana" (147) claims attention for its grand dignified style. He is essentially poetic, but to those who might have known him only in the light of earlier works this large solemn handling would be something of a revelation. It is a fine decorative and poetic picture. A picture of marvellous force and richness is "The Day's Requiem" (144), by J. L. Pickering. Leslie Thomson's "Golden Sunset" (134) is a serene and beautiful picture of light and colour. Mr. Byam Shaw's "Diana" (129) is interesting, as is all his work. A charming decorative panel is G. F. Watts' "Trifles Light as Air" (124), a group of floating amorini. This is one of four notable pictures by this master hung together. Mr. J. J. Shannon's "Portrait Group" (112) is delightul to contemplate in its rendering of good looks; we wonder if they are portraits? "A Peaceful Glade" (108), by Geo. Wetherbee, is a most engaging picture, such a one as might decoratively furnish the walls of a home for ever. A fine piece of painting is Mr. Benjamin Constant's portrait of W. B. Beaumont, Esq. (402), though the head has a curiously detached look.

In the North Room one of the noticeable things is Ivystan Hetherington's fine landscape, entitled "With Rushing Wind and Gathering Storm" (256). It is a great contrast to John R. Reid's powerful "Fisherman's Daughter, Cornwall" (237). T. Austen Brown's "Sunshine and Shadow" (246), is fine as decoration, but not very entrancing as a picture. "The Mother and Child" (61), by John D. Batten, is a capital picture panel, in which both Sir James D. Linton's large picture, "The Casket Scene from the Merchant of Venice" (201), is finely painted, but has an air of unreality and insistence on pattern (192). J. P. Beadle secures from a war picture a pleasing effect together with appearance of truth. A truly decorative picture is the "Winter Evening" (190), by Julius Olsson. Another beautiful exposition of colour is "The North Sea" (203), by Montague Smith. Nothing more beautifully refined has been done by C. E. Perugini than "Tabby and Tabitha" (205).

In the South Room "The Fountain of Youth" (67), by Walter Crane, is very interesting and clever, but it is not convincing, and we fear it is not strictly either the best picture-making or the best of decoration. A most interesting little panel in tempera, by Mrs. Marianne Stokes, is No. 64, "The Jug of Tears;" both quaint and charming; picture and frame are of value; No. 48 is a capital study of an old Tudor porch, called "A Haunted House," by Philip J. Thornhill. The elaborate decorative picture entitled "Attainment" (23), by Mrs. Evelyn de Morgan, is a masterpiece of its kind. For ourselves, we could not subscribe to such a collection of yellow and red. Portraits Nos. 16 and 32 suggest a recrudescence of the period when an intense love of sobriety produced the adjective, "willowy-waily." As usual, the balcony contains many interesting drawings, including a number of good architectural things such as "Morlaix" (334), by E. Salomons; "A Great Relique" (328), by Count Nicolas Androutzos; "The Neve, Bayonne" (325), by Mrs. Rose Haig Thomas; "A Toormina Fountain, Sicily," by Walter Tyndale (315); "The Cathedral Assisi," by Miss Katherine Nora McCracken (316); "Entrance of the Grand Canal," by Reginald Barratt; "St. Paul's, Evening," by Miss Melicent S. Grose (286); and "An Architectural Garden, Rappallo" (270), by Fred. A. Rawlence.

ARCHITECTURE FOR GIRLS.

"GIRLS are not welcomed, professionally, as members of an architectural office staff," says a writer in the *Girls' Realm*. Well—no—they are more welcome as *girls*, perhaps. Of course the more thoroughly we can get rid of some of the qualities which have made women attractive to men the better chances will there be for them working in architects' offices and doing other things. In the struggle for existence it appears that a good many idealities and refinements will have to go, and it does not, of course, follow that in contemplating a woman as an architect we need dwell too much on the picture of her climbing ladders, walking along scaffolding, or bullying workmen. There is much in the practise of architecture which might fall easily and naturally within the powers of a lady. There are tracing and tact. Ladies' tracing offices are, we believe, successful, and tracing is a necessary thing. Then, tact is a woman's special gift, and in the handling of a client it is of immense value. Many an architect fails through want of tact, even when his powers as an artist are supreme. We have known an impressionable artist, where his client was rude and unappreciative, tell him frankly to depart to a warmer climate. A lady would never do this, but yield to all his wishes and—get her own way in the end. This is not an unimportant side of architecture. But it is not all. We have yet to discover woman's special gift in the arrangement of solids and voids (except as regards arrangement of meals) and we do not think that the highest quality of all in architectural design—reserve and dignified simplicity—would be a feature in woman's treatment of it.

Yet when all objections are raised, there are left some points on which a woman's voice may well be heard in matters of architectural design. We agree with the writer in the *Girls' Realm* that a wise liberality in providing the best household arrangements, in the first building of a house, is the best. But it will probably have to be in your own house—not in a speculative builder's house. Even now we can hardly follow the writer when she says that "it is not so many years since six spray and plunge taps to a bath seemed a shocking luxury, and now few bathrooms are without that luxury." We wonder what the word "few" means. There must be a good many thousand bathrooms without six spray and plunge taps!

The plans given in the article have some excellent points. One of these is a sewing-room for the daughters of the house; one of them is *not* a w.c. and bathroom opening out of the servants' bedroom. The writer suggests bathrooms should be tiled as much as possible. Certainly they should have all the walls and floors impervious to moisture, but comparatively few people will pay for such an excellent method. Then it may be nice to have a basement floor throughout, but it is not by any means so universally practicable or inexpensive as this writer appears to suggest. Nor is it an altogether ideal place to put the laundry, for the results of laundry work must in that case be felt in the higher parts of the house. It is nice to have the washhouse below, so that a dirty clothes shoot may descend right into it, and it is also well to have shoots and lifts if you can possibly afford them. Plenty of cupboard space, well-fitted sculleries, with cleanly sink arrangements, fixed wardrobes in the bedrooms, electric lighting, efficient heating apparatus—these are all very desirable points, but we have to teach people to spend more money on house building, and to realise that the greater cost at the beginning pays in the end.

There are certainly many points in the domestic economy of house design which a lady should be specially qualified to give advice upon, though it cannot for a moment be assumed that this would of itself really justify her appointment as an architect. We can well believe there are many

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instances in which ladies would have the making of domestic architects, whether there would be as large a proportion as is the present proportion of good architects to bad ones we doubt. But now we are all being jostled so hard in the race for wealth and position we may be grateful to the editor of the *Girls' Realm* for the article on architecture by Christina Gowans Whyte.

NOTES ON CURRENT EVENTS.

THE picture of pictures this year at the Academy is surely Sir Alma-Tadema's "Under the Roof of blue Ionian Weather," which is hung in the large gallery. It is the daintiest and most perfect thing of its kind that even this distinguished artist has ever done.

Two portraits of architect-Academicians appear in this year's Academy exhibition. One is Sir Alma-Tadema's kindly portrait of Mr. George Aitchison, R.A., past president of the R.I.B.A., but we demur to the red in it. The other portrait is of Mr. T. G. Jackson, R.A., by Hugh J. Riviere. Mr. Jackson is shown seated at a drawing desk, with pencil and T-square. The painting is pleasing in colour, but not quite convincing as a portrait.

THE annual general meeting of the Royal Institute of British Architects will be held on Monday evening next, the 6th inst. The annual report, from which we give some extracts in our present issue, will be read, and Mr. Lacy W. Ridge is down to move the following resolution:—"That in the opinion of this meeting it is not desirable that By-law 26 be repeatedly suspended. The Royal Institute looks to the Council to put forward each year a nomination for the Presidency in accordance with the constitution of the Institute as laid down in the By-laws."

THE annual dinner of the Society of Architects was held last week under the presidency of Mr. T. W. L. Emden. The principal toast of the evening—"Prosperity to the Society of Architects and Architecture"—was proposed by Sir Wyke Baylis, F.S.A., and was responded to by the president.

THE Loudoun (Scotland) School Board invite competitive designs for a school to accommodate about 650 children. Designs are to be sent in by the 16th inst. to Mr. Andrew Cameron, solicitor, Newmilns.

IN some description of the architectural features of the Glasgow Exhibition buildings, a writer in the *Times* mentions the fact that the official catalogue, "wherein the names of hundreds of purely ornamental personages are recorded in imposing lists, omits, by some singular oversight, that of the architect (Mr. Miller), to whose brilliant talent we owe the chief designs of this charming spectacle." Which is all very right and proper; but why does the complainant himself ignore the architect of the permanent art galleries just completed, and which for the time being form part and parcel of the Exhibition. Mr. J. W. Simpson must surely share with Mr. Miller the credit due for this really fine collection of really architectural buildings.

THE prizes gained in the students' design competitions instituted in connection with the Edinburgh Architectural Society were presented at a meeting held on the 24th ult. by the hon. president, Mr. Harold O. Tarbotton, as follows:—Hon. President's prize of £10 for three designs, viz., "A Town House," "A Market Cross," and "A Reredos and Altar," Mr. George Wittet; President's prize of £3 3s. for design for "Entrance Gates to Park," Mr. Wellesley Bailey; Vice-president's prize of £2 2s., design for a "Wood Chimneypiece," Mr. F. A. Mears.

IN the sale of the famous collection of engravings after the works of Sir Joshua Reynolds, at Christie's, belonging to Sir Robert Edgcumbe, great nephew of the Marchioness of Thomond, who inherited them from Reynolds, a brilliant impression of "Mrs. Carnac," whole-length by J. R. Smith, made a "record" price, 1,160gs.; "The Ladies Waldegrave," 400gs.; and "Lady Henrietta Herbert," 215gs. In the same sale a complete set of London "cries," thirteen, in colours, after F. Wheatley, R.A., fetched 510gs.

THE most important picture in the sale of a fine collection of works by the old masters at Christy's on Saturday last, was an example of Hobbema of exceptionally fine quality, a view of a woody country, interspersed with houses, signed and dated M. Hobbema, 1665. Bidding started at 1,000 guineas, and rapidly reached the surprising figure of 9,400 guineas, the purchaser being Mr. Laurie. The second highest price paid on Saturday went for a beautiful example of George Romney, a portrait of Mrs. Dorothy Champion Crespigny, daughter of R. Scott, Esq., of Belton Grange. This picture was one of the chief attractions at the Grafton Gallery last year; bidding started at 3,000 guineas, and at 5,600 guineas Messrs. Agnew were declared the purchasers.

AT the drawing for the prizes of works of art in connection with the Art Union of London, held last week, the first prize, the original oil painting, "The Meadow Pool," by J. Clayton Adams, fell to Sir T. Lucas (London), and the second, £50, to Mr. E. Tort (London).

THE annual report for 1900 of the Clergy and Artists' Association, whose object is the improvement of art in churches, states that the year, though outwardly uneventful, has yet been an important one for the Association. It would be known to members that a new society had been started to carry out, under another name, those objects for which the Clergy and Artists' Association was founded six years ago, and they had no other wish than for its legitimate success. The accounts of the Association showed a surplus of £7, which was, however, swallowed up in decreasing the cash deficiency of the previous year. The deficiency now stood at £13 10s. 8d. During the year twenty-four new members had joined the Association. Owing to the depletion of Church funds, and the pre-occupation of the public mind by the war, the applications to the Association had been fewer during the year.

THE huge picture, 87 ft. long and 15 ft. high, that has for so many years hung on the wall of the Great Hall of Christ's Hospital, was removed on Tuesday morning. It is a "great work of art," indeed, rather than a work of great art. It was painted by Antonio Vario, between 1684 and 1690, "to commemorate the foundation and endowment within the hospital of the Royal Mathematical Scholarship by his Majesty King Charles II. in 1673 and 1675." It has therefore been part of the famous school for over 200 years, and it has not been removed for over seventy-five years. Christ's Hospital is doomed, however, and the great picture is to go to Horsham with the Blue-coat boys. So on Tuesday morning, under the careful supervision of Mr. C. W. Carey, the keeper of the picture gallery at the Royal Holloway College, it was lowered from the wall with pulleys and carefully and gently laid on the ground. Its weight is 2½ tons, and it is the largest and heaviest picture in the world. The canvas is to be taken out of the frame and cleaned before being rehung.

WE are glad to note that cremation continues to make progress in this country. From the report of the Council of the Cremation Society for 1900 we gather that during the year 301 cremations were carried out by the society at Woking, as against 240 during 1899, being an increase of 25 per cent. This brings the total number of cremations performed at Woking up to 1,824. During 1900 88 bodies were cremated at Manchester, 16 at Glasgow, and 40 at Liverpool. This brings the totals at these places to 475, 75, and 102 respectively. These figures are on the whole very satisfactory. In connection with the subject, it is of interest to note also that the recently-formed London Cremation Company promises to be a marked success. An excellent site has been acquired half an hour's drive from the top of Bond Street, and the extent of ground will enable the company to make provision for the disposal of the ashes of an immense population for a number of years.

THE Corporation of Windsor have begun the demolition of seven historic houses, which were good examples of the architecture of the reign of Charles I. The houses adjoin

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the present vicarage of Windsor, which formerly was a residence attached to Windsor Castle. They also adjoin a large piece of waste Crown land which was offered to the Corporation some time ago. Upon this and the site rendered vacant by the demolition of the houses, it was proposed to erect a Volunteer drill hall, as a memorial to the late Prince Christian Victor, but the project fell through owing to lack of support. The Corporation having condemned the houses—their own property—as unfit for human habitation, their destruction is being proceeded with, and in a few days one of the most interesting landmarks in Windsor will have disappeared.

As a result of the recent inquiry at Westminster Town Hall into the electric lighting regulations, the Board of Trade has introduced amendments which will allow of official arbitration in certain cases of dispute between the supply authorities and consumers.

A MEETING of representatives of district councils for the national registration of plumbers was held last week at the Guildhall. Reports were presented showing that, since the conference of health and water authorities and plumbers was held in Birmingham in October last, 2,082 operative plumbers and 494 master plumbers had been registered, and that the applications for registration were so numerous that a large number still remained to be dealt with. On the motion or Dr. Williams, Plymouth. It was decided to increase the facilities for the examination of applicants. Various arrangements for securing the more systematic training of plumbers were discussed, and on the motion of Dr. Alfred Hill, medical officer of health, Birmingham, it was resolved that apprenticeship should be encouraged in connection with the national registration of plumbers, and a special form of indenture for plumbers' apprentices, framed by the Plumbers' Apprenticeship Board of London, should be circulated for adoption throughout the kingdom.

EXAMINATIONS in practical workmanship under the Plumbers' Company's graded syllabus of instruction were held on the 27th ult. in London at King's College for students from Tottenham, Wandsworth and Willesden, and the Regent Street and Battersea Polytechnics for students attending classes at those institutions; at the Rawlish Technical School, Wimbledon, for students at Wimbledon and Kingston. Also at Accrington, Ashton-under-Lyne, Brighton, Cheltenham, Chorley, Darlington, Devonport, Dundee, Dunfermline, Garston, Gateshead, Great Yarmouth, Jarrow-on-Tyne, Lancaster, Leeds, Newcastle-on-Tyne, Northampton, North Shields, Plymouth, Southport, South Shields, Swansea, Warrington, West Hartlepool. An examination was also held at Manchester Technical School for candidates for registration. The examiners were an equal number of master and operative plumbers at each place.

A MODERN VIEW OF LONDON CHURCH ARCHITECTURE.—XVI.

BY T. F. BUMPUS.

(*Continued from page* 288.)

SCARCELY was St. James Less, Garden Street, completed when another church, even more remarkable, had made considerable progress, at no very great distance from it—St. Peter's, Vauxhall, from the designs of the late J. L. Pearson, R.A.

It was a somewhat singular coincidence that the already alluded to cruciform church of the Holy Trinity, with its gracefully lofty spire, standing at the north end of Vauxhall Bridge, which so aptly represented the later period of the first phase of revived ecclesiology—that, namely, of absolute imitation of the English Pointed church of the fourteenth century, which was at one time the peremptory dogma of the Ecclesiological Society—should have been the work of the same architect who, ten years later, was engaged in constructing so remarkable a specimen of the second or inventive phase of the Gothic movement but a short distance from the opposite end of the same bridge.

Upper Kennington Lane is the locale of this fine edifice, which occupies a portion of the site of old Vauxhall Gardens. It is constructed almost entirely of brick, and consists of a nave and chancel of uniform height but sufficiently distinguished from each other by a massive gable coping; western lean-to narthex; south-west baptistery; and aisles to both nave and chancel. The northern aisle, doubled at its eastern extremity to the extent of the last nave bay, and the one bay of the chancel, constitutes a quasi transept, which in the cross views of the church's interior considerably enhances its general picturesqueness of effect.

The style of St. Peter's is, generally speaking, very bold late twelfth century, though some details have quite a Romanesque character, while in others—notably the windows—a soupçon of thirteenth century is introduced. But

ST. PETER'S, VAUXHALL
(J. L. Pearson, R.A., Architect, 1861-64).

the whole is of so Franco-Italian a cast, that, contemplating the nobly sweeping apse with its surmounting fleuriated iron cross, or the dignified clerestory of the nave with its plate-traceried windows of two lights with their large sexfoiled roses, it is difficult for the student to imagine himself in the prosaic dulness of Lambeth and not under the sunny skies of Châlons, or Chartres, or Murano.

Finished in June, 1864, with the exception of the tower and spire which are to rise at the north-east angle of the nave, St. Peter's, Vauxhall, attracted upon its completion more than an ordinary share of public notice, the press being lavish in its encomiums upon the genius and power displayed in its construction; while its consistent brick vaulting, at the period of which we are writing, was a novelty in ecclesiastical design, the Gothic movement having produced no vaulted building of any size since the new church at Chelsea, finished in 1824, with the exception of Exeter College Chapel, Oxford, by Scott, and a church by the same architect at Holbeck, near Leeds.

St. Peter's, therefore, may be called the precursor of that fine succession of vaulted churches built by its late distinguished architect—Truro Cathedral; St. Augustine's, Kilburn; St. John's, Red Lion Square; St. Alban's, Birmingham; St. John Evangelist's, Norwood; and St. Michael's, Croydon—but in all of which, while insular tradition in plan and outline is to a great extent rejected, detail from Beverley, Lincoln, Worcester, and other of our fair Early English minsters has been laid under contribution.

The exterior of St. Peter's, Vauxhall, is too closely

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environed by houses to permit of its finest points being duly appreciated, but, on entering it by the low door, opening from the western narthex, few London churches succeed in arresting us with an impressiveness so great as this church, the eye travelling along the noble vista terminating in a gracefully vaulted apse, based, perhaps, upon a study of that at Nôtre Dame Dijon. Here, tall single lancets filled with richly tinctured stained glass by Lavers and Barraud, from cartoons by Mr. Westlake, compose the fenestration.

A standing figure of Our Lord occupies the middle lancet, the Blessed Virgin and St. Peter filling the one on either hand. All are rather stiff in the treatment of their vestments and general attitude, but they are in harmony with the architecture, and, recalling as they do the stern effigies that look down upon us from the clerestories of Auxerre and Bourges, these in the speliuncar apse of St. Peter's form a very solemn termination to the brick-vaulted view eastwards.

At the west end, above the narthex—a feature, by-the-way, to which no disciplinary value can now attach, but one of great practical utility in a church situated in so noisy a thoroughfare as St. Peter's—is a pair of grand two-light windows, with a sexfoiled rose, separated from one another by a boldly-projecting buttress, and exhibiting that glazing in quarries, nearly square, which began to find favour with certain architects of the movement five-and-thirty years ago. In the nave clerestory the same type of window is used, and below them is an unpierced triforium stage, divided into panels by slender shafts, springing from a hook-shaped corbel just under the lower stringcourse, and carrying the ribs of the simple quadripartite vaulting, which is of yellow brick judiciously streaked with red.

Towards one of these triforium panels, Messrs. Clayton & Bell have contributed a painting in a few simple colours —something more than a mere outline, yet not a complete picture—like a 12th century illumination; but the experiment does not seem to have been very successful, the usual combination of London disagreeables having almost entirely obliterated all traces of its existence.

At a first glance the nave piers seem to be simple cylinders crowned with quasi-octagonal capitals, *i.e.*, elongated square ones with the edges canted off, but on a closer inspection they will be found, especially when the student places himself in the aisle, to assume an entirely different aspect from the presence of a couple of slender attached shafts, introduced, one would fancy, more for picturesqueness' sake—for an air of picturesqueness they undoubtedly impart to the aisle's vista—than for practical purposes, though apparently they support the roof ribs.

The carving, not only of the pier capitals but throughout the church, wherever attempted, is exceedingly strange, though unquestionably vigorous, and is almost Romanesque in character.

Especially noteworthy is the capital of the last pier on either side the nave, where a species of miniature arcading is introduced, and that of the respond, which is composed of three slender shafts, not forming a half cluster, but placed parallel with each other.

In the apse the triforium space is occupied by small coupled arcades, through which stained glass windows, by Clayton & Bell, representing minute groups, peer very prettily.

Then under these we have, by the same artists, a series of fresco paintings, subjects in which colour is but sparingly used on alternately dark blue and Indian red grounds. Representing the last incidents in the Life of our Lord, they are so arranged that the crucifixion occurs immediately over the reredos—a bold and simple composition in the shape of a gabled trefoil, the wall space within which has a fleuriated cross with enrichments of coloured marble and gold mosaic, but now concealed from view by hangings, before which stands a diminutive crucifix, and six, much too big, candlesticks of Renaissance design. Two would have been ample for an altar of this size.

Other points to be noticed in this fine church are the gracefully wrought iron grilles to the low wall dividing the chancel from its aisles and the nave, and which are perfect studies in this department of ecclesiastical art; the manner in which the south chancel arch is carried up for the better emission of sound, the organ being placed within it; the north-eastern quasi transept, whose cleverly contrived vaulting reminds us of the chapel on the eastern side of the north transept at Chichester Cathedral; formerly used as a chancel to the Subdeanery Church, and which Archdeacon Freeman proved to be the original chapter-house; and the semi-circular baptistery, whose lancet windows have microscopic groups in stained glass by Clayton and Bell.

The view across St. Peter's from this chapel should be particularly noticed, as the visitor is enabled to take in at one glance the extremely charming vaulted south aisle, and the double one at the opposite angle of the church. The only fittings in this church to which it is not possible to extend praise, are the kneeling boards, and against these wretched man-traps the visitor will do well to be on his guard.

(*To be continued.*)

SOME BOOKS FOR SANITARIANS.

By CHAS. E. GRITTON, A.M.I.C.E.

"SANITARY ENGINEERING."

AN entirely new and greatly enlarged edition (revised and modernised) of the standard treatise on "Sanitary Engineering," by Colonel E. C. S. Moore, R.E., M.S.I., containing 830 pages of text, with 140 tables, and 860 illustrations, including 92 large folding plates, forming an imposing octavo volume, excellently bound in cloth, has just been issued by Mr. B. T. Batsford, the price being 32s. net. The increase of matter in this second edition amounts to upwards of 170 pp. of letterpress and 150 plates and other illustrations.

Sanitary science is so all-important and progressive that no one whose duty it is to safeguard the public health should be without this indispensable work of reference. In reviewing the first edition I used the word monumental. I must now add mammoth. The labour of preparation must indeed have been colossal. The first edition was so favourably received that it was entirely disposed of within 12 months.

From a reviewer's standpoint one of the most gratifying things in the book is the courteous and grateful way in which suggestions have been received both by the gifted author and the well-known publisher, the only exception of which I am aware being the retention of the better-known spelling of syphon, instead of siphon, asked for by some hypercritical critic.

The hydraulic tables have been improved by the addition in many instances of the logarithmic values of the quantities. Table 50, giving the values of $(\frac{1}{n})$, has been extended to five places of decimals, ensuring greater accuracy. Tables of the velocity and discharge of egg-shaped sewers (new form) flowing two-thirds and one-third full, specially calculated, are added. For determining the minimum inclination of such sewers the latter table is of the greatest value.

Special chapters deal with Bacteriolysis, Destructors, and the Construction of Chimney Shafts for Destructors. The ubiquitous American appears in the person of Mr. G. Everett Hill, M.Amer.Soc.C.E., who supplies information on the subject of "Forced Aëration."

The only bad fault I have found in the book is on p. 501, where instructions are given for applying the oil of peppermint test. Applied in this extraordinary manner it would be worse than useless. Unless it can be applied *outside* the building, viz., at a ventilating pipe, it is simply misleading, owing to the almost instantaneous diffusion of the volatile vapour. There are a few minor inaccuracies, such as "Detector" for Winser's "Detector" disconnecting-trap, in the index, p. 189: and the oddly worded paragraph on p. 105, from which it appears that Mr. W. C. Tyndale is manufactured by Mr. O. D. Ward! But taken as a whole it is *the* book for all interested in true sanitary work, and we are indeed deeply indebted to Col. Moore and his indefatigable publisher.

"NEW TABLES."

"New Tables," also by Colonel Moore, for the complete solution of Ganguillet and Kutter's formula for the flow of liquid in open channels, pipes, sewers and conduits, is a volume uniform in size with "Sanitary Engineering," and is likewise published by Mr. Batsford, the price being 15/- net.

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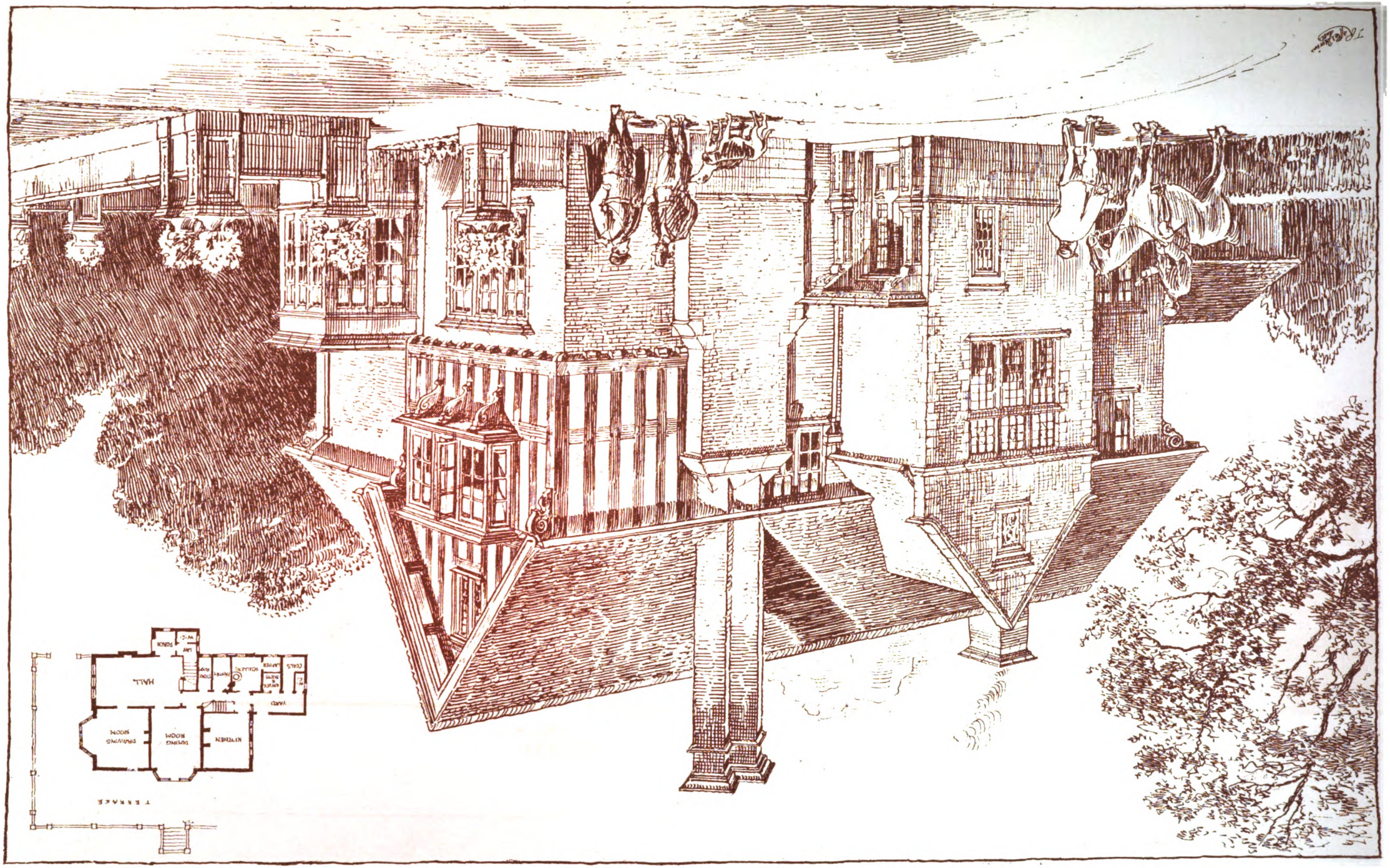
A HOUSE Nº PETERSFIELD

W. HARGREAVES RAFFLES ARCHITECT



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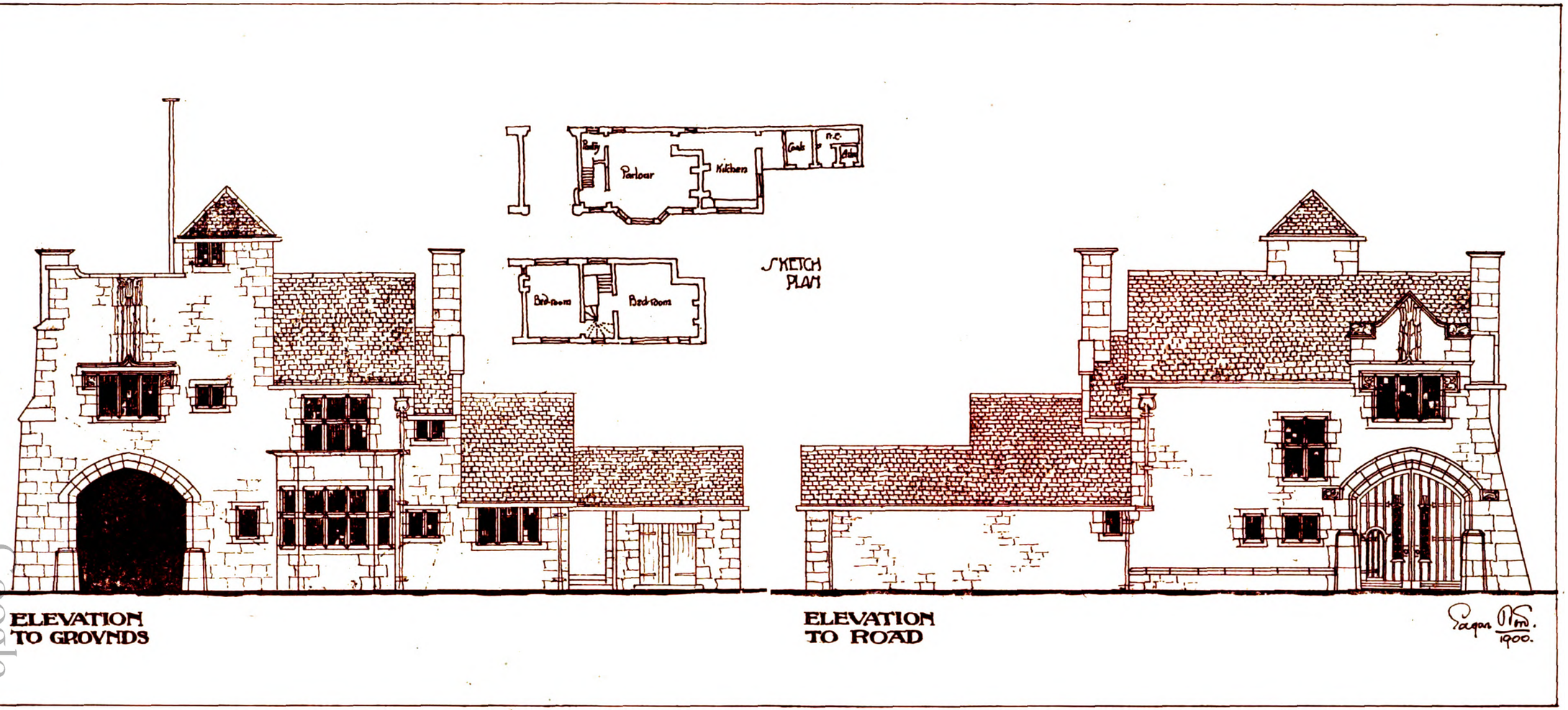

A GATEHOUSE AT LINDLEY, HUDDERSFIELD. EGBAR WOOD. ARCHITECT, MANCHESTER & OLDHAM

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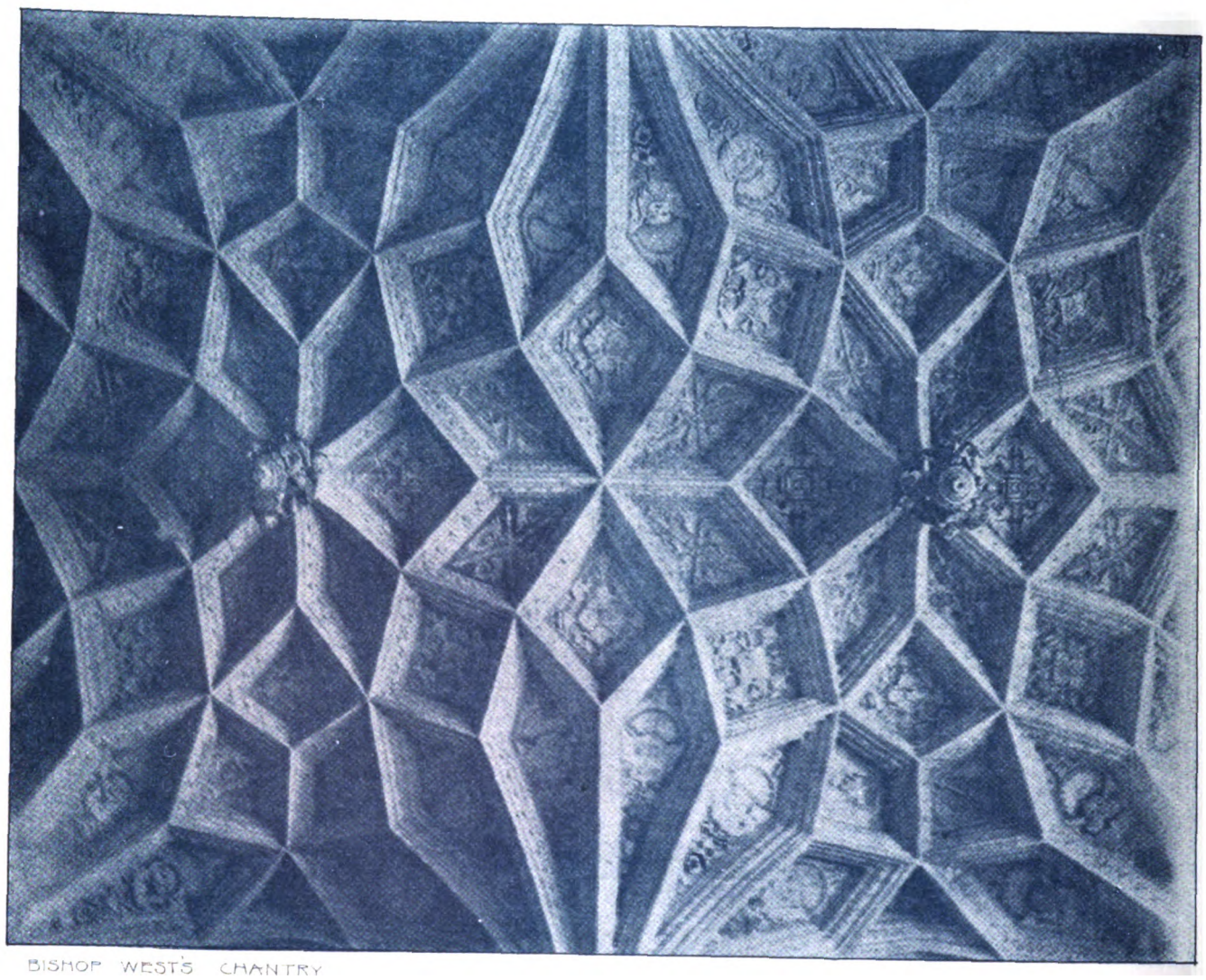
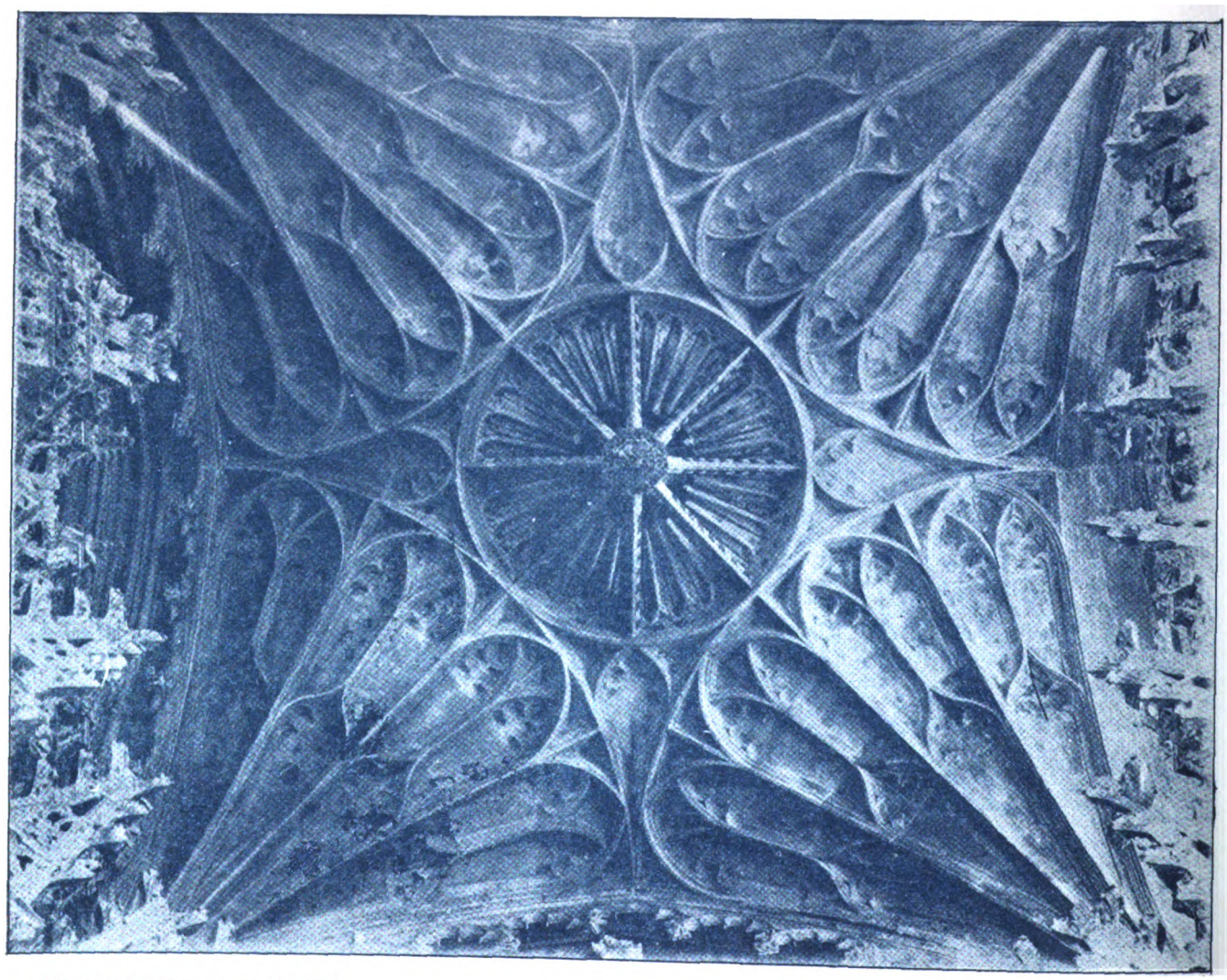


BISHOP WEST'S CHANTRY



BISHOP ALCOCK'S CHANTRY

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ELY CATHEDRAL

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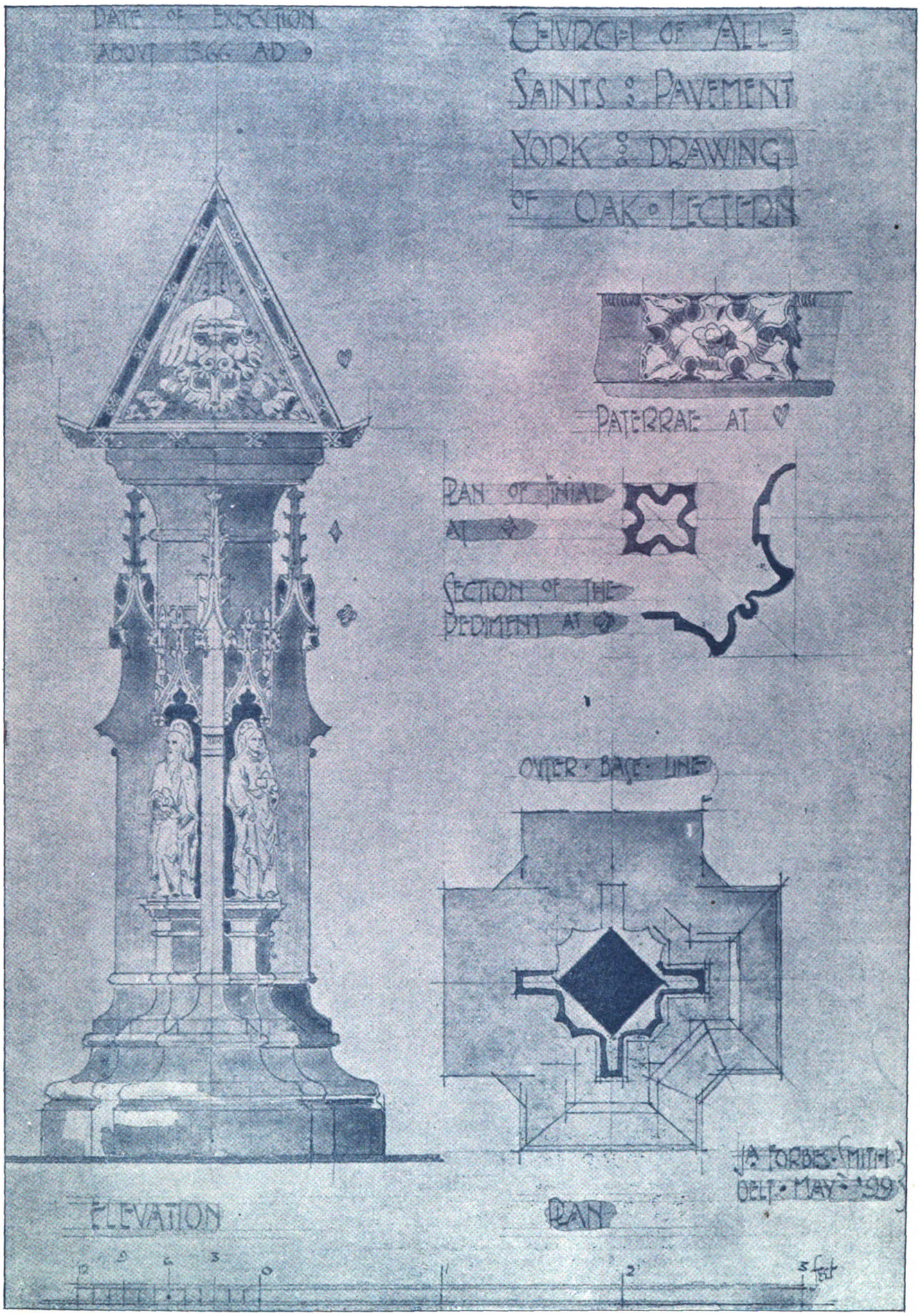

R.I.B.A. STUDENTSHIP DRAWINGS.
MEDAL OF MERIT AWARDED
TO J. A. FORBES-SMITH.

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This volume contains more than 230 pages of specially compiled Tables, with explanatory letterpress illustrating their application, and a large folding plate; and is divided into two parts: Part I.—Arranged for 1,080 inclinations, from 1 over 1 to 1 over 21,120, for 15 different values of (n). Part II.—For use with all other values of (n).

A practical attempt has been made to supply what has been a real want, a complete and reliable means of readily solving calculations involving the use of Ganguillet and Kutter's Formula, and the result will prove of the utmost value to all engaged in Hydraulics, Sanitary Engineering, and Water Supply. The immense saving of time, and the accuracy of results, commend it as the most valuable series of "Labour-Saving" Tables yet published. Armed with these two admirable books, and of course the necessary mathematical knowledge to use them, there are few problems arising in sanitary engineering not rendered easy of solution.

"GALVANIZED IRON."

This book, which gives a detailed description of this important industry and its manufacturing process is by Mr. James Davies, of Bristol (London: E. & F. N. Spon, Limited).

Mr. Davies does not write as a theorist, but from a practical point of view: he has been connected with the trade for more than thirty years, and his father was the third to commence the industry. His experiences in Chili provide entertaining reading, although at the time they must have been unpleasant enough.

The dimensions of the trade are immense, and increase annually. Half a million of money was made in twenty-five years by one manufacturer. The author advises the insertion of advertisements in the *Melbourne Journal of Commerce* for Victoria, and the *Sydney Trade Review* for New South Wales, although he clearly believes that a trip of twelve to eighteen months to the Cape, Australia, New Zealand, and home again by the West and East coasts of South America, produces the best results. The book is fnll of wise suggestions, many of which will appeal to those engaged in business of quite different kinds. I quote one:—"*The London or Liverpool Office* should be represented as really a branch of the business, and not as an agency, and the stationery of the office should bear the firm's name and address, so that the same importance would be attached to the communication as if it came direct from the works."

Mr. Davies has nothing good to say of the patent processes. An amusing instance is given of boiler arrangment at a works which did *not* succeed. A group of four boilers, three good ones (new) gauged up to 200 lbs. pressure, and the fourth a smaller, second-hand one (presumably bought cheap) gauged up to 150 lbs., and probably not save above 100 lbs. pressure. *All four were coupled together!* Although there is a difference in cost of 10s. per ton between the "best," and the "best best" qualities, the actual difference is stated as about the same as between "tweedledum and tweedledee," with the single exception of painting.

Mr. Davies's book leaves the impression that anything about galvanized iron not well-known by the author, is not worth knowing; and as to painting, Mr. Davies may possibly think that I am not entirely unprejudiced. However, I do know that "Galvanum" will adhere properly to new galvanized surfaces for years, and I no not know of any other paint that will, and is sold under a guarantee to that effect. All interested in galvanized iron should peruse this eminently practical work.

OUR ILLUSTRATIONS.

THE GATEHOUSE, LINDLEY, HUDDERSFIELD.

EDGAR WOOD, ARCHITECT.

WE illustrate to-day another excellent example of Mr. Edgar Wood's characteristic work. The house, situated in a very exposed position, has been built of local stone, selected with broken colour, and used in deep courses. The roofs are covered with stone slates, care being bestowed upon their size. The turret and stairs leading to a flat on the roof were added after the work had been commenced, in response to a wish of the proprietor to have the benefit in summer of the fresh breezes and the view.

THE R.I.B.A. PUGIN STUDENTSHIP COMPETITION.

DRAWINGS BY J. A. FORBES-SMITH.

WE continue our illustrations of Mr. Forbes-Smith's excellent work submitted in the Pugin Studentship competition.

A HOUSE NEAR PETERSFIELD, HANTS.

W. HARGREAVES RAFFLES, ARCHITECT.

THIS picturesque home illustrates the excellent plan of a large hall parlour. It will be noticed that the entrance porch and staircase and conveniences are all outstanding from the main building together—a good arrangement.

SOME DECORATED WORK IN ELY CATHEDRAL.

THIS illustration is in continuation of the series of views illustrating Mr. Alfred Darbyshire's paper on "Some English Cathedrals," and which appeared in our issues of March 1st and 8th last. The beautiful series of views, from which our illustrations were taken, were prepared by Mr. M. B. Copland, of S. Ann's-on-the-Sea.

THE R.I.B.A. COUNCIL'S REPORT FOR 1900-1901.

WE give some extracts from the annual report of the R.I.B.A. Council, which is to be read at the annual general meeting on Monday evening next.

After appropriately referring to the death of Queen Victoria, and the continuance of the Royal favour towards the Institute by His Majesty King Edward VII., the report proceeds:—

The following tabular statement shows the present subscribing membership of the Institute, compared with that at the corresponding period last year:

Year.	Fellows.	Associates.	Hon. Associates.	Total.
1900	620	1,013	45	1,678
1901	621	1,028	46	1,696

During the official year since the last Annual General Meeting 29 Fellows have been elected, 46 Associates, 3 Hon. Associates, and 1 Hon. Fellow. Two Hon. Corr. Members have been elected: J. Antoine Bouvard (Paris) and J. G. Pedro d'Avila (Lisbon). The Council must attribute the smallness of the increase in membership in the class of Fellows to the more than usually heavy losses by death, by resignation, by transference to the class of Retired Fellows, and by other removals from the list. There have been only three special elections to the Fellowship by the Council under the new proviso to by-law 9, as compared with 11 last year, and 12 the year before. On the other hand, the ordinary elections to the Fellowship by the general body have been 27, as against 21, 14, and 8 respectively, in the three preceding years.

The losses by death have been as follows:—*Fellows:* Charles Barry, Henry Cowell Boyes, John Burnet, John Butler, Francis Chambers, Henry Currey, Charles Henry Driver, William Charles Evans-Vaughan, Joseph Goddard Horace Gundry, Edward Joseph Hanson, Thomas Harris, William Hepper, Newton Edward Jennings, Thomas Meakin Lockwood, William Henry Powell, John Murray Robertson, Lloyd Tayler, James Buckley Wilson, William Young. *Associates:* John William Blakey, Frederick Boreham, Henry Greenslade Wade. *Retired Fellows:* Henry Astley Darbishire, William Milford Teulon, John James Thomson. *Hon. Corr. Members:* Giuseppe Poggi, Antoine Henry Revoil, Jules Jacques van Ysendyck.

The usual progressive examinations were held in June and November 1900, and the Council have to report a steady increase in the number of candidates for each of the examinations. The total number of candidates examined during the year was 603, as against 548 in 1900. The number of Probationers of the Institute now stands at 1,507, and of Students at 368. The Council again regret to

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say that the Arthur Cates prizes for the best testimonies of study (supplemented by certain specified sheets of drawings) submitted by Students for admission to the Final Examination have not been awarded this year, no Student who had passed the examination having fulfilled the conditions. The Ashpitel Prize has been awarded to Mr. Shirley Harrison, who passed the Final Examination in November, and extra prizes to Messrs. C. E. Varndell and Heaton Comyn. The "Special" Examination will be held this June in Sydney and Montreal.

* * * * *

The Royal Gold Medal was awarded last year to the Professore Commendatore Lanciani (*Hon. Corr. Member*), of Rome, for his works as an archæologist and architectural writer.

* * * * *

The collection of paintings of the Royal Institute has been enriched by an admirable portrait of Professor George Aitchison, R.A., Past President, by Sir Lawrence Alma-Tadema, R.A. The portrait will be exhibited at the Royal Academy this year. As a mark of their appreciation both of the constant and kindly services Sir Lawrence has rendered to the Institute for the twenty-four years of his membership as an Hon. Associate, and of the great eminence to which he has risen in his art, the Council took the opportunity of his painting this portrait to ask him to allow them to propose to the General Body his election as an Hon. Fellow. Sir Lawrence was duly elected at the General Meeting on the 18th February.

The Council have the pleasure to record the fact that the President, Mr. William Emerson, is a member of the advisory sub-committee of the general committee on the question of the National Memorial to her late Majesty. The President was also a member of the Art Committee of the Royal Commission for the Paris Exhibition 1900.

* * * * *

The Council have had long negotiation with the London County Council with reference to the Holborn-to-Strand Improvement scheme. With a view to securing proper architectural treatment for the Crescent site, the Council were asked by the London County Council to co-operate in a scheme whereby eight architects, four to be nominated by each body, should submit designs, on certain conditions, each architect receiving an honorarium of £150. A deputation of the Council waited on the Improvements Committee of the London County Council and protested against the proposed conditions. They suggested that there should be a competition among the eight architects, and that three should be chosen to carry out specified blocks, working together, however, as a consultatory committee on the whole scheme. The interview resulted in a few modifications in the conditions as to the details of drawings required and an increase in the honorarium offered to £250. The Council were given to understand that there could be no guarantee that any of the eight architects should execute all or part of his design, and the invitation to co-operate was renewed on the slightly modified basis. Desirous of aiding the London County Council in their efforts to secure architectual treatment for the new street, the Council accepted the invitation under strong protest, and nominated four architects. Their names were Messrs. Reginald Blomfield, T. E. Collcutt, Ernest George and R. Norman Shaw. Two of them, Messrs. Collcutt and Shaw, declined the nomination. The Council were requested to nominate two others in their place. In view of the London County Council's disregard of their protest accompanying the original nomination, the Council considered that they had gone as far as was consonant with the dignity of the Institute, and the profession which it represents, to meet the wishes of the London County Council, and formally declined to make further nominations.

Another matter to which the Council have given their attention is the alteration of the steps of St. Martin's Church. The London County Council were asked by the St. Martin's Vestry (now merged in the Council of the City of Westminster) to contribute towards the cost of the proposed alterations, which consisted in doing away with the broad platform in the middle of the flight and moving up the lower steps, thereby widening the pavement. The London County Council sought the advice of the Council of the Institute. Acting on the report of the Art Committee, the Council protested against any proposal to touch the steps, both for artistic reasons and on the ground that the traffic was not so great as to necessitate any widening of the pavement. They urged, however, should the need for widening be found imperative, and consequently the abolition of the landing on the west side, that at all events the landing on the south side should be retained for the sake of architectural proportion. The London County Council adopted the Council's view, and refused the St. Martin's Vestry and the City of Westminster any financial assistance. In reply to a protest from the Council, the Town Clerk of Westminster replied that the work, having been already begun, must be proceeded with.

The London County Council also submitted for the opinion of the Council their draft by-laws under the Metropolitan Management Acts, as to the disposal of plans with reference to pipes, drains, and other means of connecting with sewers. The main suggestion of the Council was, that in lieu of elaborate duplicate plans and sections, which it was proposed that any one about to construct or reconstruct drains, etc., should deposit with the sanitary authority, it would be sufficient if one carefully prepared block plan were sent.

The Council having been invited by the Bridge House Estates Committee to offer their suggestions on the proposed plans for the widening of London Bridge, referred the matter to the Art Committee, and adopted their report. While deprecating any interference at all with the structure, they suggested, in case of necessity, an alternative scheme whereby the face of the parapet should be restricted to the line of the existing piers, instead of overhanging them. The latest information received from the Corporation is that consideration of the scheme has been referred to a sub-committee of the Bridge House Estates Committee.

* * * * *

Adopting the report of the Art Committee, the Council have addressed a protest to the Ecclesiastical Commissioners and the Lords of the Privy Council against the Union of Benefices Bill as drafted when introduced before Parliament last year. They urged that this Bill, to extend the Union of Benefices Bill 1880 to the whole of England and Wales, should contain provisions whereby precious architectural monuments should be safeguarded against the destruction that has been permissible and practised in London under the provisions of the existing Act.

* * * * *

The Council, adopting the suggestion of the Science Committee, sent out in January to the Corporation of the City of London, the London County Council, and all the new Metropolitan Borough Councils, a circular letter with reference to the administration of the various Acts of Parliament in relation to the construction, etc., of drains and sanitary appliances and the structural removal of nuisances. They suggested that the question of detection of nuisances should remain in the department of the medical officer to the authority, and that matters relating to the construction, etc., be placed in the department of the surveyor to the authority.

The Council have also adopted the report of the Science Committee with regard to a scheme suggested by the Plumbers' Company for the hall-marking of plumbers' work, and they have arranged with the Plumbers' Company for a conference to be held between the Company, the Royal Instiute, and the water authorities, with a view to settle the best kinds of materials and forms of fittings used in plumbers' work, and to provide a basis for regulations on the subject.

* * *

The Council regret that their negotiations with the Institute of Builders, extending over a space of two years, have come to a fruitless conclusion. After much effort, suggestions for a revised form of contract were agreed upon by representatives of the two Councils, and the amended clauses were printed in the Journal on the agenda for the general meeting on the 7th January. The Arbitration Clause was found, however, to be so unacceptable to the general body of members, that no resolution was moved from the chair at the general meeting. The form was discussed, and the chairman, on behalf of the Council, promised a revision of the Arbitration Clause before presenting it again to the Institute. The Council submitted

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to the Institute of Builders a revised Arbitration Clause in which "Clause 16" (Materials) was inserted among the clauses exempt from the operation of the Arbitration Clause. The Council of the Institute of Builders accepted this proposal on the condition of certain changes being made in Clause 16 itself, which practically rendered its inclusion among the exempted clauses nugatory. A deadlock occurred, and the Council reluctantly declined further negotiation on the subject with the Institute of Builders.

* * * * *

The Institute's publication, "Suggestions for the Conduct of Architectural Competitions," has been re-issued as amended at the general meeting on the 7th January. The Competitions Committee have caused stamped and addressed postcards to be sent to the hon. secretaries of all allied societies, with a printed form at the back, to be filled up by them with details of any proposed competition in their districts of which they may hear. On receipt of one of these, the secretary has instructions to write at once to the promoters, urging that the competition be conducted on the lines of the Institute "Suggestions," a copy of which is enclosed.

The Council have renewed the representations made in 1889 to the Local Government Board concerning the administration of building by-laws in non-Metropolitan districts. A deputation was received by the Parliamentary Secretary, Mr. Grant Lawson, at the Local Government Board, on the 12th March, when a draft set of by-laws for the use of Rural District Councils, drawn up by the Local Government Board, was submitted for the opinion of the Institute. The Council have forwarded to the Local Government Board the suggestions of the By-laws Committee with regard to this draft.

The Council, having learned that the University of London were about to proceed to the appointment of a Board of Studies for Fine Art (including architecture), took measures to lay before the authorities the desirability of the Royal Institute being specially represented on the Board. The Council are gratified to report that the choice of the Senate has fallen upon Mr. Arthur Cates, who has further been elected by his colleagues as Chairman of the Board.

The Council have re-appointed Mr. Thomas W. Cutler as the representative of the Institute on the Sanitary Inspectors' Examination Board. At the Congress of the Royal Institute of Public Health, to be held at Eastbourne in July, Mr. Herbert Spurrell has consented to represent the Institute. Messrs. Alexander Graham and Edwin T. Hall will represent the Institute at the British Congress on Tuberculosis to be held in London this year, also in July.

* * * * *

The Council recommend to the attention of members the Architectural Museum, Tufton Street, Westminster, which is somewhat in need of funds, for purposes of repairs, maintenance of the 4,000 casts of examples of Gothic work, and the purchase, if possible, of casts of Classic and Renaissance examples. They feel that the support of the profession at large is deserved by a most valuable institution, whose foundation and maintenance have been the devoted work of a few men. The Council have decided to make the Museum an annual grant of twenty guineas, on the condition of the Council being adequately represented on the Committee of the Museum.

The question of architects' names appearing on advertisement boards has come before the Council, and they have issued a resolution to the effect that the signing of an architect's name on his building is not derogatory to the profession, but that "it is undesirable for architects to place their names on boards and hoardings in front of buildings during course of construction for purposes of self-advertisement." The Council earnestly hope that members will co-operate with them in making this resolution as effective as possible.

The Council take this opportunity of drawing attention to the needs of the Architects' Benevolent Society, and express the hope that the names of more members of the Institute will appear in the list of subscribers.

The Council are much gratified in being able to draw attention to the satisfactory financial condition of the Institute. Early this year the sum of £1,050 was invested in Queensland Government 3 per cent. stock, thus bringing the total amount of the invested capital of the Institute up to £10,000.

THE BUILDING TRADES EXHIBITION.—III.

AT the stand of the Columbian Fireproofing Company, Limited, in the Fire Prevention Section, there was shown a section of a fire-proof floor built up in a 15 ft. span upon the system of construction which so admirably withstood the severe tests applied to it under the direction and supervision of the committee in 1899. Indeed, according to the official report of the committee upon the test the floor came out of the test practically unharmed. The method of construction consists of suspending in steel stirrups, hung over steel joists, special ribbed steel bars, from 1 in. to 2½ in. in depth, all completely embedded in concrete. In this case the floor is carried by columns encased in concrete, and is constructed in an exactly similar manner to that tested by the Fire Prevention Committee. The tested floor was subjected to a recorded temperature varying during the nearly three hours' test from 500 Fah. to 2,335 deg. Fah., and in the end it was found that "the whole of the concrete of the floor and sides of the beams was sound and good, not disintegrated at any point"—good proof of the fire-resisting qualities of such construction. An excellent example of a combined concrete floor and ceiling is shown in section; it is constructed on the same principle as the floor above referred to, but the ceiling is composed of white glazed bricks bedded in the concrete with a dovetail bond. This makes an admirable finish, and the section shows a solidity of construction that inspires confidence both in its strength and fire-resisting qualities. The company illustrate in a very practical manner their method of construction applied in a variety of ways. One noticeable feature of this Columbian form of construction is that the strength of the floors is in all cases largely in excess of the requirements, for the ribbed bars act on the suspension principle, thus securing a big reserve of strength. Further there would always be deflection before any real breakdown could occur. The ribbed steel bars are specially adapted for combined action with the concrete.

The Silicate Paint Company (J. B. Orr & Co., Limited) exhibited specimens of wall decoration executed in their well-known "Duresco," the excellent merits of which we have often described.

Ripolin, Limited, showed their speciality, "Ripolin," which is a paint with an enamel-like appearance that dries with a smooth glossy furnace, and will, we understand, neither crack, chip, blister, or peel off. Its elasticity is demonstrated by the presentation to visitors of a strip of flexible metal, coated with Ripolin. This metal may be bent double without affecting the surface; and it is claimed that when applied upon materials which expand or contract according to the variations of the temperature, it will retain a perfect surface. Its range of colours is practically unlimited, and a number of examples were shown illustrating the variety of purposes to which Ripolin can be applied.

Mr. Wm. Mitchell exhibited Ball's Instantaneous Varnish Remover, together with samples of woodwork varnished, painted, and polished, after being treated with the remover. There were also to be seen photos of old, dirty, and hard brushes, and the same brushes after being cleaned. The practical demonstration given of the uses of this remover afforded ocular proof of its inventor's claims, and the remover should be most useful, both to the trade and amateurs alike, for cleaning varnished wall-paper and all descriptions of paint and varnish work.

Messrs. Fenlon & Son had on view an economical arrangement for heating conservatories; they also show their patent "Tudor" geysers for baths, etc., with patent locking gear, which are worthy of the visitor's notice.

The Offa Ventilating Company exhibited their Patent Offa Inlet Ventilator; which consists of a frame carrying an air filter, and with a moveable face plate, on which the incoming air strikes, and is immediately diffused all over the wall in a thin film. No draught is perceptible in any position within six inches of the wall, a fact demonstrated to visitors by means of a working model. The ventilators are made in five sizes, from 10 in. by 7 in. to 21 in. by 18 in. They can be adjusted to any required aperture, or closed entirely at will, the whole of the interior is easily got at from inside the building, and the filter removed for cleaning or renewal.

The Moreau Marble Co., Ltd., made an effective display

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of their material which is manufactured by placing soft limestone in a metallic solution in order to obtain the desired colour; afterwards it undergoes a hardening process, and finally it is dried and friction-polished. This is a very useful, economical and effective decorative material.

The "Runwell" patent lavatory, shown by W. F. Mason, Limited, Manchester, is a very ingenious and simple arrangement for dispensing with plug, washer, chain, and overflow pipe. It is also claimed that there is no need for the usual lead trap beneath the basin. The action is extremely simple and certain. The discharge is syphonic and the quick outrush of the water cleanses the waste pipe. The overflow is automatic, that is, when the water reaches a certain height in the basin it immediately discharges itself, so that if by chance the tap is left turned on there is no danger of flooding. Another good point in connection with the waste discharge is that should any small article, such as a ring, pass out with the water it can easily be recovered by simply lifting the cover of the waste apparatus, it being impossible for it to be carried away with the water into the waste pipe. This lavatory arrangement commends itself to the attention of all who have had experience of the usual inconveniences of the ordinary type of lavatory fittings.

Some good samples of stone from the Hackenden Stone Quarries, East Grinstead, are shown by Messrs. H. B. Harwood & Young, the proprietors of the quarries. The stone is of good colour and excellent in quality. A capital stone is exhibited by Mr. S. T. Clothier, Street, Somerset.

The Warrington Bond Iron Syndicate, Limited, Manchester, practically demonstrate the advantages of their cleverly designed wall-tie, which we favourably noticed at the last Building Trades Exhibition when it was first shown. It is a very ingenious and efficient tie.

A new form of fireplace called the "Beresford," is exhibited by Messrs. Oates & Green, in the Smoke Abatement Section. This is of the well-fire type, but is raised above the hearth level, having a space below the fire for the ash deposit, which can thus be cleared out in the ordinary way. The fireplace is built entirely of glazed fire-bricks, the back being constructed of loose fire-bricks arranged in overlapping tiers, so that the topmost tier overhangs all the others, and thus the heat is projected into the room. The heat given out by this fire is intense and radiating. The radiating surface of e fire-back and of the fireplace generally is very large. It is also to be noted that almost any kind of fuel may be used—coke, anthracite, or soft coal. The fireplace was exhibited in the Smoke Abatement Section, and was "Highly Commended" by the Smoke Abatement Committee. Messrs. Oates & Green also made an interesting show of some very excellent sanitary ware of various kinds, luding lavatory basins, trough closets, latrines, sinks, sh-tubs, gulleys, etc.

THE MILEAGE OF THE EUROPEAN RAILWAYS.

THE French Minister of Public Works has just published a return showing the mileage of the railways in the different countries of Europe at the end of 1899, with the number of miles opened during that year. Germany comes first with a total of 34,069 miles, of which 600 miles were opened in 1899, while Russia comes second with 28,745 miles, of which no fewer than 2,164 were opened to traffic in 1899. The third place belongs to France with a total of 26,382 miles, of which only 317 were opened within the year, the fourth place being taken by Austria-Hungary with 22 670 miles, of which 726 miles were opened for traffic. Great Britain opened only 125 miles of new lines in 1899, bringing the total up to 21,790 miles. After these five countries there is a great drop, for Italy, which comes sixth on the list, has only 9,827 miles, of which no more than five miles were new in the year. Spain opened 145 miles of new lines in 1899, bringing the total up to 8,301 miles; and then comes Sweden, which, apart from Norway, had 6,702 miles, of which 310 miles were new within the year. Belgium, which has a higher mileage in proportion to its area than any other country, is only ninth in regard to the length of its lines, having 3,871 miles, of which 66 miles were new within the year, while Switzerland brought its total up to 2,355 miles by opening 38 miles in 1899. Roumania is 10th with 1,932 miles, of which only 25 were new; while Turkey, Bulgaria, and Roumelia are bracketed together with a total of 1,912 miles, Denmark comes 13th with a total of 1,775 miles, and an increase of 150 miles in the preceding year; the 14th place being occupied by Holland with a total of 1,715 miles, only nine of which are new, and the 15th by Portugal (1,470 miles). Norway remains stationary with 1,240 miles, while Greece has 605 miles (or 12½ more than in the previous year) and Servia 360 miles, or five more than in the previous year.

TRADE NOTES.

THE United Methodist Free Church Hall at Heaton, near Newcastle, is being ventilated by means of Mackay's patent direct-acting ventilators, supplied by Messrs. Cousland & Mackay, ventilating engineers, 150, Hope Street, Glasgow. The same firm have carried out the ventilation of the Glasgow Art Club, which is at present under-going alterations and extensions, by means of Mackay's patent direct-acting continuous exhaust ventilators.

A LARGE clock has just been erected in the parish church of Kirton Lindsey, Lincolnshire, which strikes the hours, chimes the Westminster quarters, and shows time on one dial. The clock has been made and erected by John Smith & Sons, Midland Clock Works, Derby, to the designs of Lord Grimthorpe.

THE heating of New Post Office, Waterloo Road, Blackpool, is to be by Spencer's patent "Ventilo Radiators," the patentee and sole maker of which is Mr. W. F. Spencer, Cross Bank Works, Oldham.

A NEW striking clock has just been fixed at Hardwicke Grange, Shrewsbury, the residence of Mr. Frank Bibby, which shows time on two external dials. The makers are J. B. Joyce & Co., Whitchurch, Salop. The same firm are also fixing a new striking clock at the Habour Offices, Carnarvon, which shows time on two external dials, and also one for Messrs. Johnson Brothers, Bootle Dyeworks, Liverpool, which shows time on two illuminated dials 4 ft. diameter, fitted in a wrought-iron drum. They have also a large striking clock in hand for the Isle of Man Mining Company, to be erected at Foxdale, Isle of Man, and a similar one for the parish church, Weston, near Runcorn. Also a large Cambridge quarter clock and bells for Sir Alfred Jodrell, Bart., for Glandford Church, Norfolk, and a large ting tang quarter clock for Thornton Curtis Church, Lincolnshire, and one for the Corporation of Blackpool.

THROUGH the liberality of A. B. Foster, Esq, J.P., patron of the living of Egton parish church, near Grosmont, North Yorks, the Rev. R. G. Glennie, M.A., vicar, has been enabled to give Messrs. William Potts & Sons, clock manufacturers, Leeds, the order for a new clock to strike the hours and show the time upon two external dials facing west and south, and striking the hours, to be erected in the parish church tower, Egton, near Whitby. Messrs. Potts are also making a Cambridge full four quarter chime clock, and showing the time upon two external dials for Goathland parish church on the North Yorkshire moors, and a new illuminated clock for the savings bank, Hull.

THE design for the Duke of Westminster memorial window which is to be placed in the south transept, Poets' Corner of Westminster Abbey, prepared by Mr. G. F. Bodley, A.R.A., has been approved by the memorial committee. It will take the place of the present large rose window, and the cost will be about £2,000.

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The British Architect.

LONDON: FRIDAY, MAY 10, 1901.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.—The FINAL AND SPECIAL EXAMINATIONS will be held from the 21ST to the 28TH JUNE inclusive. Applications must be sent in on or before the 24TH MAY.

The Testimonies of Study, &c., with the necessary fees, must accompany the applications, all of which are to be addressed to the undersigned.

W. J. LOCKE,
Secretary R.I.B.A.

No. 9, Conduit Street, London, W.

STUDENT AND ASSISTANT.

THERE is a significant remark in our correspondent's "Notes from Boston" to the effect that there are many architectural students in the States who may have studied abroad, good enough men in their way, but without *practical* training. These students, he points out, do not remain assistants longer than they can help, and start on their own account at the earliest possible opportunity. This lack of practical knowledge, and the early blossoming into professional life on their own account, he suggests is bad both for the client and the contractor, at whose expense the budding architect thus too often buys his experience. Well, there may be something in the suggestion. But we certainly do not see why a sound theoretical education should in any way be held responsible for the lack of practical training. It is as necessary—really necessary—for an architect to have a thorough education, as that he shall have a full and proper course of training in the practical work and business details of his profession. The great point is to secure both, and not the one at the expense of the other.

We know that pupilage has to some extent lost its old position as a teaching medium, which in some ways cannot be altogether regretted. But that is no reason why the system should be regarded as no longer of any value. On the contrary we consider a properly constituted system of apprenticeship as being of as much consequence to the architect as to the joiner, and we should regret to see it abandoned in favour of day-classes in any school of architecture, however well founded and carried on. The idea that the education of the architect is in the future to be found more or less only in schools, classes, and studios is surely wrong. It will be found, as ever, chiefly in the architect's office, and the builder's workshops; that is, that part of it which really matters. Successful college courses by no means indicate the qualities of the student as an architect. It may be an advantage to have a college course, and it is always well to aim at success, but mere learning of itself will not produce an architect.

It is certainly to be hoped that the newly-organised day classes of the Architectural Association will have no tendency in the direction of divorcing the work of the class-room from the work of the office. Taken in conjunction with office work, we believe the new classes should constitute a real step in advance in architectural education. The one is the proper complement of the other. Only it must not be supposed that all this is for the shortening of the time of education and training. We confess to some fear lest present-day students are not inclined to be somewhat in haste, and hence may conceive the notion that the two or three years necessery for passing the R.I.B.A. examinations is sufficient preliminary to the undertaking of practice on their own account. This is a difficulty, and a real one, because the position of an architectural assistant is far from being a pleasant or profitable one in the majority of cases, for it is always precarious, and, as a rule, poorly paid. One can hardly wonder then that qualified students should prefer their independence, and seek, if possible, to commence practice on their own account so soon as opportunity offers. But, nevertheless, experience is an essential qualification, and in this respect two or three years spent in a few good offices must be counted invaluable. It is a bad beginning to buy experience at the expense of one's clients, or of the builders. At the same time, no architect wants to educate assistants, and there is no reason at all why he should if our educational system is carried out on right lines.

Perhaps it has become somewhat the fashion of late to think that architects can be manufactured more quickly than of old, and that a three years' apprenticeship, and perhaps two or three years as improvers or assistants, should ensure proficiency. Young men push themselves forward when barely able to understand and appreciate their own ignorance. It is difficult, possibly, now-a-days, to believe in any waiting or perfecting process. But there is a world of truth in Emerson's somewhat trite philosophy on this point. "I pronounce that young man happy," said he, "who is content with having acquired the skill which he had aimed at, and waits willingly when the occasion of making it appreciated shall arrive, knowing well that it will not loiter. The time your rival spends in dressing up his work for effect, hastily, and for the market, you spend in study and experiments towards real knowledge and efficiency. He has, therefore sold his picture, or machine, or won the prize, or got the appointment; but you have raised yourself into a higher school of art, and a few years will show the advantage of the real master over the short popularity of the showman."

THE ROYAL ACADEMY EXHIBITION.—II.

THE ARCHITECTURAL GALLERY.

IF this gallery contains less of interest than usual in large and important buildings, the same may certainly be said in regard to domestic work, which is less in quantity apparently, and certainly inferior in quality, than the usual average. We look to the domestic side of architecture often enough to relieve the poverty or monotony of the rest of the show, but this year our crumbs of comfort are small. We have nothing from Norman Shaw, E. J. May, Edgar Wood, Ernest George, or E. S. Prior to represent this branch of work. There are, however, a few good instances of characteristic work, such as No. 1528, a very simply treated house of modest dimensions at Ascot Heath, by Leonard Stokes. The low proportion of the building, its flatly wide projecting eaves, and simple treatment generally, with plain sash windows, mark it out as a type of design which could hardly be too widely adopted for country houses, and is never likely to pall on one as does the purky picturesqueness of so much modern design. The plan is L-shaped, compact and convenient, with the parlours and hall placed nicely *en suite*. Admirable house design of good old English character is Mr. Walter H. Brierley's extensive restoration—almost rebuilding—of Welburn Hall, Yorkshire, as illustrated in Nos. 1576 and 1613. The former, which is a view of the garden front with walled terrace, makes a delightful group, which is largely helped by Mr. Brierley's new bay and piazza. Another fine house by the same architect, entirely new, is Grimston Court, Yorkshire (No. 1586). This has an excellent plan, and follows very closely that of the old one at Welburn, if we remember rightly. The entertaining space is capital, and the dining-room and its serving arrangements excellent. The whole building will make a fine group, with a wide, low-spreading tower at the re-entering angle.

Mr. Ernest Newton is to the fore again this year with two houses of that eminently broad and quiet type of design which he so rightly associates with country house work. No. 1,577 is apparently a rough cast house with tiled roof, and has a capital look of solidity and generous proportions. The plan is worth looking at, and the house is entered through a porch such as the architect knows so well how to design; we regret, however, the harking back to a very new old style of lattice verandah between the library and drawing-room. In the house at Chislehurst, 1573, we have red brick walls hung pretty low down with tiles; it is admirably simple, good in its outline, and pleasant in picturesque disposition of windows. In the well-considered plan an added interest is given to the illustration. We note in the dining-room that a pier centres the view out of the room end; this we never think satisfactory. 1,578 is a very vivid water colour of Gleb-

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lands, Wokingham, a house already illustrated. Above this hangs a nice little water colour of the Birchmoor Cottage, Woburn, 1,580, by H. Percy Adams. In 1,558 we have a well-balanced house design by Basil Champneys, in which a little private chapel is a good feature. This house is a good object lesson in Mr. Champney's skilful management of good outline to his groups of building. The alterations to the White Hart, Sonning-on-Thames, by W. Campbell Jones, 1600, make an admirable group of riverside buildings.

The proposed house on the Thames, 1598, by Arthur Stratton, is clever, but too suggestive of a cricket or golf pavilion to be satisfactory for pleasing domesticity; the long range of windows might have been agreeably managed without this.

Nos. 1591, 1596, and 1597 illustrate a house near Piccadilly, by C. J. Harold Cooper. It is somewhat novel to find a house illustrated by a series of etchings, which in this case are by F. Slocombe. They make pleasant pictures, but are lacking in a good rendering of architectural detail; a good plan is obtained in a small space.

The house for Sir Benjamin Baker, Bowden Green, Pangbourne, 1631, by Arnold Mitchell, appears to lack one great essential, viz., a pleasing sky line and mass outline; the gables and chimneys seem to us to come very awkwardly. Tissington Hall is situated in one of the most charming spots in Derbyshire. The restoration of it for Sir Richard Fitz Herbert, Bart., by Arnold Mitchell, is illustrated in 1630, in which the present ugly chimneys are preserved and others similar added. The long, flat lines of parapets bristling with these chimney pipes will hardly be very satisfactory; otherwise the work seems very good.

St. Aidan's Vicarage, Leeds, 1636, by Bedford & Kitson, is an agreeably proportioned simple house with hipped roof; this kind of work can hardly fail to look well. Messrs. Bateman & Bateman have one of their picturesque houses in 1640 "House at Barret Green, Worcestershire." A little entrance view is particularly pleasing in its form and detail. We were sorry to see the nice coloured elevations and plan of "New Stables at Oakover, Ticehurst," 1667, by Ernest Emerson, skied, for the design is good. We have already referred to Mr. Bodley's Hayes Lodge.

The above, together with Nos. 1648, 1641 and 1681, practically includes all of note in domestic architecture, and it must be admitted it is small in amount for Academy architecture.

AMONGST THE PICTURES.

It is usual to speak of a good academy year or a bad one in relation to the more or less sensational or striking pictures exhibited. But whatever may be said of such overpoweringly attractive things as Mr. Luke Fildes' "Doctor," there can be little doubt that M. Benjamin Constant's fine picture of the late Queen will draw continuous crowds of interested visitors. This canvas has the west wall of the great gallery to itself, and is finely draped with two shades of blue hangings, whilst on either side of the frame stands an elegant palm plant; the effect is excellent. The glinting sunlight which illuminates Her Majesty's figure has a fine setting of golden brown and reds within the frame, which itself is of dark wood. Whether in some degree M. Constant's picture looks thin and wanting in richness and depth, there can be no doubt as to the dignity and grace of the work as a whole.

Of the funeral pictures in the next gallery it may well be claimed that Mr. J. Charlton has won a large measure of success in his canvas, both as a picture and as a record. Personally we should have preferred a much soberer rendering of the colour, and a little less of the vividity of a photograph in the advancing figures. A more artistic result is obtained in another commemoration of the funeral, viz., Mr. W. L. Wyllie's "Passing of a Great Queen." Here the picture is *the* thing, and the record is subservient. It is an admirable picture. As an impressive record one would have liked to see the environment of battleships more vigorous and overshadowing, but the picture is fine in its way and will bear studying.

In the great Gallery III., the big picture of Her late Majesty, by no means exhausts the chief interest. Mr. E. A. Abbey's "Crusaders Sighting Jerusalem" is a marvellously fine work in colour, in idea, and in detail, and fills one's mind with real thoughts of bygone time. Then nothing more exquisite has been done in a spirit of the most delightful decoration than Sir L. Alma-Tadema's 220 "Under the Roof of Blue Ionian Weather." This little amphitheatre of white marble seating, showing above it a tiny fringe of blue sea and sky, is one of the daintiest things which has ever been done in paint. The man beyond in pale green drapery, the seated girl on the upper seat in the faintest tones of pink and green, the girls reclining beside her in a lavender drapery, are all in the most delicate foil to the transparent blue-white marble. One touch of brilliant colour in the group of nearer figures gives an added value. This picture is one to dwell on again and again by those who love a picture for its own sweet sake, apart from all story-telling or adventitious charm. Another treat in colour is Mr. Waterlow's "Nymph" in No. 234. The drawing of the figures, as well as the delightful combination colour values, interest one vastly more than the fact that these nymphs are finding the head of Orpheus. The "Daughters of A. Wertheimer, Esq.," by J. S. Sargent, R.A., has been described very accurately as "imposing." These ladies are really too imposing, and, brilliant as the canvas is, it shows Mr. Sargent at nearly his worst; it would be hard to line a room with such insistent portaits. How very different this artist can be is seen in No. 219, "Mrs. Charles Russell." The "Duke of Somerset," No. 174, is a splendid production by Hubert von Herkomer, R.A., and is a picture which causes longing for a past style of dress. "The Pool of Endymion" (118), by George Wetherbee, is one of those serene and beautiful bits of landscape one longs to look upon often.

Leaving the other galleries for the present we may note the water-colour room which generally has some special attraction for the architect. There is some excellent work to be found on the walls this year. In 1104, Mr. Arthur G. Bell treats us to a beautiful mellow drawing of the "Belfry at Bruges," as seen through the streets in the early morning; a very charming drawing; in 1109, we have one of Mr. Herbert J. Finn's striking drawings of "Canterbury Cathedral"; in 1107, we have a dainty view of "Damascus," by Walter S. Tyrwhitt; in 1132 a bit of the fine church at Ploermel, Brittany, by Charles Maundrell; in 1145, one of those extremely picturesque groups we so often find abroad, "The Grand Place Diviant-sur-Meuse," by Miller Smith. "Bremen Yard, Eton College," is a good drawing with architectural detail well rendered by George M. Henton. "The Convent, Rothenburg-ana-Zauber," by William H. J. Bool, is a good study of a picturesque spot; and in 1059 we have a grand study of a bit of old "Christ's Hospital," by Douglas G. Crochett. An architect, Mr. W. F. Unsworth, treats us to a sketch of "Walter Tyndale's House at Haslemere" (1227), a most delightful bit of old English cottage building. One is glad to note a careful drawing of "Pump Court," by Rosalind C. Smallfield (1206), somewhat laboured and hard, but with a good effect of light and shade.

NOTES ON CURRENT EVENTS.

THE annual general meeting of the Royal Institute of British Architects was held on Monday evening last under the presidency of Mr. William Emerson. The annual report of the Council—the greater portion of which appeared in our last issue—was adopted. Afterwards Messrs. Hippolyte, J. Blanc (Edinburgh), Charles F. Doll (London), and Edmund H. Sedding (Plymouth) were elected Fellows, and Mr. Robert D. Wells, B.A. (London), was elected an Associate. Mr. Lacy Ridge's motion to the effect that repeated suspending of By-law 26 was undesirable was, after some discussion, withdrawn.

THE Council of the Society of Architects have passed the following resolution:—"That, in the opinion of the Council of the Society of Architects (founded 1884), all architects being British subjects should be granted the privilege of showing their loyalty by submitting designs for the proposed National Memorial to Her late Majesty Queen Victoria, under conditions which should put those resident in distant parts of the Empire as nearly as possible upon an equal footing with those living in England, and that a copy of this resolution be sent at once to

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Viscount Esher, with a request that it be laid before His Majesty the King."

MR. W. D. CARÖE has a pleasant appreciation of the late Mr. J. L. Pearson, R.A., in the current number of the "Architectural Association Notes." In conclusion he says:—"A comprehensive analysis is beyond the scope of a brief appreciation, but we may well enumerate those merits which specially claim our notice. And, first of all, Form,—covering both proportion and contour. That this is a quality which education and practice will develop, his own works give proof, but it is nevertheless innate. Proportion is the music of architecture, and as no study will make a great musician of him who has no music in his soul, so must the same be said of him who has not proportion in architecture. The best to be done, if the golden gift be absent, is to lift ourselves by the study of acknowledged masters, and humbly and critically compare our efforts with theirs. These also were Pearson's: Balance and Harmony of parts and of details, Concentration, Unity, Seriousness of Aim, Spontaneity, and that apparent Ease of attainment which disdains the striving after new effects, and conduces to that restful appreciation so grateful to the beholder. I need say no more of Pearson's well-controlled individuality, but I would refer to his sound scholarship in every branch of his art. Not that scholarship which expresses itself in elucidating the past and informing or mystifying the present by the making of books; but that highly-trained gift of observation which unerringly absorbs the best, and is unwittingly influenced by it in new production. That seems to me a quality which is invaluable in every age of architecture, itself the product of all the ages gone before. This attainment made Pearson, despite all that his detractors may assert against him, an eminently safe custodian of historic buildings. His touch was delicate and his hand clean, and to the perfervid critic of his work in this direction, it is well to say 'Go and do better.'"

THE House of Lords' Committee, which has had under consideration the bill, promoted by a Manchester syndicate, for the purpose of obtaining power to acquire a large amount of property between Market Street and Cannon Street, in the centre of the City, in order to carry out a series of large and important street improvements, came to the conclusion, at their meeting on the 2nd inst., that the preamble was not proved. The bill was therefore rejected. We certainly consider that works of this kind are most appropriately and effectively carried out by the municipal authority. The scheme suggested by the bill was not an unattractive one, but the interference with existing property would have been very great, and could hardly be regarded as warranted on the score of urgency of need.

THE British Museum will, says the *Athenæum*, come to the end of its storage room with the close of the present year. As there is no hope of obtaining enough money from the Treasury for the extension of its London buildings—one Treasury official is said to have suggested the stoppage of all fresh books, under the Act for the Abatement of Nuisances—some of the Museum officials propose the building of a storehouse for books long unused, in a dry part of the country where land is cheap. All books shunted there would be marked in the catalogue with "a big, big D," and would only be accessible after 24 hours' notice, being sent up daily from the mortuary and returned thither when done with. Both the University Library at Cambridge and the Bodleian are sadly in need of some such relief, for there is no room for the due enlargement of their present buildings.

THE Earl of Jersey's Committee of the House of Lords gave their decision on Tuesday on the Bill promoted by the governors of St. Bartholomew's Hospital. Mr. Fitzgerald, K.C., on behalf of the Almoners of Christ's Hospital, pointed out that they had a site of 5½ acres in the heart of the City of London, and that specific offers for it of £720,000 and £700,000 had been made. In the circumstances they could not accept arbitration. Evidence in support of the petitioners' case was given by Sir J. Savory, Sir J. Whittaker Ellis, and some professional gentlemen, and the committee, without consulting in private, found that the preamble of the Bill was proved. The effect of the decision is to refer the whole matter to arbitration.

THE new Prince Regent Theatre, or Richard Wagner festival playhouse, in Munich, is now rapidly advancing towards completion. It is being erected on the banks of the River Isar, not far from the spot where King Louis II. of Bavaria intended to build a Wagner theatre. The stage is to be built according to Wagner's ideas of theatre construction, and the scenic arrangements will, it is said, be in advance of anything yet attempted. The auditorium will be in amphitheatre form. It is proposed to open the theatre in August.

THE members of the Edinburgh Architectural Association visited Arthur's Seat last Saturday afternoon. Mr. Goodchild, of the Geological Survey, acted as leader of the party. Mr. Goodchild explained the development of the physical features of the hill.

THE tenth of the series of panels intended for the mural decoration of the ambulatory of the Royal Exchange is now being prepared for the reception of Mr. Thomas Brangwyn's picture, "Modern Commerce." This is a companion design to the "Ancient Commerce" of the late Lord Leighton. The Skinners' and Merchant Taylors' Companies have commissioned Mr. Edwin A. Abbott, R.A., to paint a picture commemorating the founding of their annual feast, on the eve of St. John's Day, 24th of June. This will be placed in its niche in the course of the year.

THE Worshipful Company of Makers of Playing Cards offers the "H. D. Phillips Prize" of £10 10s. for the best special design for the backs of playing cards intended for presentation by the company to its guests at the inauguration banquet of the Master Wardens. Three other prizes of £5 5s., £3 3s., and £2 2s. respectively are offered by the company for the three next best of such designs. Full particulars as to the conditions of the competition may be obtained on application to Mr. W. Hayes, the clerk of the company, Guildhall, London, E.C.

AMONGST the Dutch pictures disposed of at Christie's on Saturday last was a triptych by Rubens—a sketch for the altar-piece in Antwerp Cathedral, "The Raising of the Cross," which fetched 3,200 guineas. A brilliant little landscape by A. Van de Velde, "Cattle passing a Stream," signed and dated 1667, realised 300 guineas. This was sold for £40 in 1776, and for £72 in 1786—its last appearance at a public sale. On the other hand, "An Interior of a Remise," by P. Wouverman, said to have cost £480 in 1826, now only fetched 125 guineas. A fine portrait of A. Palamedes, by himself, fetched 410 guineas.

A PAIR of Louis XVI. vases and covers of dove-grey marble, at one time in the collection of Prince Galitzine, were included in a sale of objects of art at Christie's on Friday last. The vases, which measured 23 inches in height and 13 inches largest diameter, were knocked down for 3,500 guineas. A pair of brass andirons, English seventeenth century, 26 inches high, fetched 460 guineas, and the same sum was bid for a powdered blue Chinese vase and two beakers, 16 inches high, whilst an Arab mosque lamp, with vessel of the same, realised 350 guineas.

AT a meeting of the Society of Miniature Painters, held on the 30th ult., the following officers were elected, viz.:—Sir William B. Richmond, K.C.B., R.A. (President); Messrs. Hal Hurst, R.I., and Alyn Williams, A.R.C.A. (Vice-Presidents); Mr. Edward Tayler (Hon. Treasurer); Mr. Cecil W. Quinnell (Hon. Sec.); Mrs. Behenna, Mrs. Lee Hankey, Miss Merrylees, and Messrs. W. Lee Hankey, R.I., Dudley Hardy, R.I., Lionel Heath, Cecil J. Hobson, and H. R. Robertson, R.E. (Council). The sixth annual exhibition of the society is now open at the Modern Gallery, 175, Bond Street, W.

THE annual report of the executive committee of the trustees of Shakespeare's birthplace and Anne Hathaway's cottage, presented at the trustees' meeting on Wednesday, stated that at New Place, Shakespeare's last residence, most interesting discoveries had been made, consisting of

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a very ancient well, portions of two fifteenth century brick walls, and the remains of the foundations, 2 ft. in thickness, which formed the eastern portion of the great house built by Sir Hugh Clopton in the reign of Henry VII., subsequently the property of Shakespeare under the title of New Place. The latter was a discovery of great importance to Shakespearians, as it enabled them to form a better idea of the dimensions of the house where the poet spent the last few years of his life, and in which he died.

THE researches carried out by Professor Fürtwangler, the eminent archæologist, in the precincts of the Temple of Athena, in the island of Aegina, have resulted, writes the Athens correspondent of the *Times*, in the discovery of five marble heads belonging to the famous series of Aeginetan sculptures in the Glypothek at Munich. The sculptures, which adorned the pediments of the temple, were discovered in 1811, and shortly afterwards brought to Munich by King Ludwig I. of Bavaria; the missing portions of the statues were supplied by Thorwaldsen. Three of the heads now discovered are those of helmeted warriors, the other two belong to female figures. As the export of antiquities from Greece is forbidden, the heads cannot be replaced on the statues to which they belong, but it will be possible to substitute casts for the heads designed by Thorwaldsen. A finely-executed hand belonging to a female statue and other fragments have been brought to light. The search for submerged statues near the coast of Anticythera has been resumed since Easter, but only some pedestals and a horse's head in fair preservation have been brought to the surface. Some fragments of an ancient ship and its anchor have been recovered.

WE are informed that owing to the serious indisposition of Mr. Edwin O. Sachs, chairman of the committee (which we regret to hear of), the formal opening of the new Testing Station at Westbourne Park will be postponed to the end of the month, but the first private test is taking place this week under the direction of Mr. Ellis Marsland.

THE annual meeting of the British Association of Waterworks Engineers will be held at Birkenhead on the 9th, 10th, 11th, and 12th of July. A number of interesting papers will be presented for discussion, and a lecture on "Rainfall" will be delivered by Mr. Plumer, the Astronomer to the Dock Board. Visits are also being arranged to various waterworks and other places of interest in the vicinity.

NOTES FROM BOSTON, U.S.A.

By R. BROWN.

Architecture and Emigration.

THE question of emigration has been much in my mind of late, suggested by the study of some international questions. Business in this country goes along at a very unsteady gait; periods of activity are often quickly followed by periods of depression. At one time there will be a demand for "experienced draughtsmen," and at another time the "experienced draughtsman," unless he has fortunately dropped into a permanent billet, will be left out in the cold. In former years I have advised British architectural draughtsmen to come to the United States. But with increased knowledge of the country, the ways of business and living, I should now advise emigration to other parts of the Empire rather than to the United States.

I am inclined to think that in the near future, the Home Government will see the desirability of keeping, if possible, all Britain's sons and daughters within the Empire. It is said that nearly fifty thousand people left Ireland last year. Where did they go to? Most likely to the United States, the "Greater Ireland" of America, where they will be worse than lost to the Empire.

As indicated in my last notes, the dominion of Canada to the north of us is doing well, and in the near future there must be openings for those engaged in architecture and the building arts. New Zealand also with its advanced government and favoured climate should be another field.

The Rotch Travelling Studentship.

The examinations for the Rotch Travelling Studentship are being held. Five men took the preliminary examinations, and of these one failed to meet the required standard. The subject is "a design for a museum of art for a growing city of half a million inhabitants, liberally endowed, and already in possession of large and valuable collections in the various departments of art. It is to be placed on grounds measuring roughly 500 by 900 ft., and the buildings are to be so placed as to form an effective group." Mr. Clarence H. Blackall conducted the final examination at the rooms of the Boston Architectural Club. Two weeks are allowed to complete the drawings from the preliminary studies. The judges are W. T. Partridge, of the Architectural Department, Columbia College; John Galen Howard, of New York; and Edward B. Green, of Buffalo. Mr. Partridge was the winner of the scholarship in 1890.

Architectural Assistants.

It is interesting to note the conditions which prevail in the offices of some of the architectural firms in this country, where a great amount of work is done. Necessarily there is a limit to the amount one architect can do, and although the client pays the full commission, his work may not always receive full consideration. In some of these offices there is a large following of students who may have studied abroad, good enough men in their way, but without *practical* training. So sometimes the client, and very often the contractor, has to suffer from defective working drawings.

The spirit of individuality is so strong in this country that an architectural student does not remain an assistant to another architect any longer than he can help. As soon as he comes across a client willing to trust him, he starts out as a full-fledged practitioner. Sometimes he learns a great deal at the client or contractor's expense.

Boston Society of Architects.

The New Englander now observes Christmas Day as a holiday. It is a festive season. But that other day of the Church, Good Friday—a day of fasting—is not observed. The Boston Society of Architects held its usual meeting, falling this month on Good Friday, when Mr. C. Howard Walker gave a talk on "Out-of-the-Way Places," illustrated by drawings and sketches.

Boston Art Club.

The Boston Art Club, also, on Good Friday night held a reception, being the opening of the sixty-fourth Exhibition confined to Water Colours and Black and White Drawings. There are in all 175 works, a much less number than usual. These are mostly from Boston and New York artists. Colin Campbell Cooper, of London, England, is represented by one picture, "Evening near Nieuwendam," and Emma Lambert Cooper, also of London, by three pictures. Individual picture exhibitions in the picture-dealers' galleries follow each other fast, and are too numerous to mention. That of Chas. H. Davis was exceedingly fine. He is a landscape painter of a high order, and his methods and style are pure and natural.

L'Art Noveau.

"L'Art Noveau" has appeared in some of the Boston furniture stores, but it has not carried the town by storm. There are attempts to return to simpler forms in tables, chairs, etc., and I am told there is a fair sale for such furniture, accountable by the fact that this is the season when the New Englander gets his country house built, furnished, or put in order for the coming hot days.

A Burns Memorial for Boston.

Some time ago an association was formed and incorporated for the purpose of erecting a monument to the poet Burns. About 2,000 dollars has already been subscribed, and when 15,000 dollars has been raised the work will be begun. I understand sculptors on both sides of the Atlantic will be invited to compete. A a recent concert in aid of the funds, Senator Hoar gave a splendid address.

Co-operative Building.

A Workers' Co-operative Association has been organised to apply the principle of co-operation in building. The

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workers, who lay the bricks and build the buildings, will have shares in the dividends, in addition to wages. The future working of this organisation will be watched with much interest. One of the first objects will be the erection of a building called a "Labour Temple," where the different labour organisations can hold their meetings.

The Boston University intend erecting a new Medical School Building. Mr. Wm. Gibbons, Preston, is the architect.

There have been some new ceiling decorations recently placed in the Children's Reference Room of the Boston Public Library, the work of John Elliott.

ARCHÆOLOGICAL RESEARCH AT ASSOS.

In the local newspaper Professor Charles Eliot Norton appeals to the public for subscriptions to a work illustrating the Archæological Society's work at Assos, undertaken nearly twenty years ago. The drawings are chiefly by Mr. F. H. Bacon, one of the original members of the expedition. Two hundred subscribers to the work are required. About half of this number have been obtained. The work will be published in five sections of about twenty plates, with brief letterpress, at 5 dollars each. The size is 21 in. by 14 in. The book should appeal to all lovers of Greek Art.

BUILDING NOTES.

The new Music Art Building, to be erected on Huntington Avenue, will be known as "Melba Hall." In dimensions it will be 100 ft. by 200 ft., six stories high, and constructed of brick and stone. There will be 175 rooms, two harge entertainment and assembly halls, and five committee rooms. The music and art studio will be as near sound-proof as possible, and all will be abundantly lighted and supplied with a perfect ventilation system. The ground floor will contain four stores. The cost will be about 500,000 dollars.

The estimated cost of new building and engineering enterprises projected throughout New England during the past week, as compiled by the F. W. Dodge Company, approximate 2,974,000 dollars, as against 1,975,000 dollars during the corresponding week of last year, making a total of 68,371,000 dollars thus far to date this year, as against 30,881,000 dollars for the corresponding period last year.

Contracts have actually been awarded this week for 3,230,000 dollars' worth of work.

Throughout Boston and vicinity the amount of work projected during the week approximates 608,000 dollars, making 28,767,000 dollars to date.

About 25 per cent. of the work projected in New England is for dwellings, apartments, and hotels, while 14 per cent. is for mills, factories, and other manufacturing buildings.

ENGINEERING AND SANITARY NOTES.

By CHAS. E. GRITTON, A.M.I.C.E.

TWO SIDES TO EVERY QUESTION.

THIS has just been forcibly brought home to me. In common with the majority of Englishmen, I believe, I considered the export duty on coal as wise and unobjectionable. I have now received a protest against the proposed tax in the form of a circular letter issued by a committee on behalf, and by instruction of, the mining, commercial, and shipping community of Durham and Northumberland, which puts the other side in a somewhat striking way. The coalowners show so little consideration for the interests of others, that I must confess to a strong bias against them, but Britons (who are not coal-owners) believe that "Fair play's a jewel." To quote the circular, "As an Island nation we should not place impediments in the way of our ocean trade, and thus assist foreign competition to damage our important industry, upon which we are dependent for our food supplies." "Coal constitutes *four-fifths of the total weight of the exports* of the United Kingdom." In Germany there is a "Railway preferential tariff for coals in the direction of the seaboard for assisting German mineowners in their competition with British coals." "The remote contingencies of a dim and distant future need not trouble our minds, nor the problematical needs of an enlightened but scoffing and ungrateful posterity." Which recalls the old retort, "What has posterity done for me?"

"SOOTENE."

A highly ornamental air-tight tin tube (price 5s.), full of the above curiously named compound has reached us. It is an improved and patented dry fire extinguisher, and merits the attention of the British Fire Prevention Committee. I have tested it on a fairly large bonfire, of dried wood, straw, and paper well saturated with tar, and when this was in full blaze, the dry powder thrown forcibly upon it exhibited a really extraordinary capacity for extinguishing all flame in a moment. The sole owners and manufacturers are "The Unique Trading Company," of Rotherham. It is claimed to be the only extinguisher that will not deteriorate with age. It is easy to use, swift, sure, and always ready. No damage results from its use to flesh or fabric. "A pail of water weighs 30 lbs.; it's hard to lift This tube filled weighs 3 lbs.; it's easy to handle!" It cannot explode, corrode, or freeze. The tubes are 20 in. long and 2 in. in diameter.

A SOLUTION OF THE CENTESIMAL DIVISION OF THE CIRCLE.

Mr. Jno. C. Fergusson, M.Inst.C.E., who is his own publisher, sends us a book intended for engineers, surveyors, naval and military officers, and travellers, and explaining the use of his surveying circle. This is patented, and manufactured by Messrs. T. Cooke & Sons, Limited, of 8, Victoria Street, S.W. Mr. Fergusson is convinced that every man who appreciates the value of time, who prefers easy methods to complicated laborious ones, and who wishes to lighten the burden of others, will welcome his surveying circle and percentage tables as labour savers. The examples in this book show how problems in triangulation, range-finding, and levelling may be solved by simple arithmetic, often mentally, when the angles are read in the percentage unit of angular measurement. The circle can be attached either in azimuth or vertically to old or new instruments, which are then at once converted into telemeter instruments or range-finders, with which surveying problems can be solved arithmetically. The author's 25 years' experience in nearly all the British Colonies, the United States, and China, enables him to speak with some authority. He first discovered the principles and advantages of his percentage unit, over the degree, as a unit of angular measurement, in British Columbia in 1893, and has made thousands of calculations for this novel and useful work.

"AMERICAN ENGINEERING COMPETITION."

We have received from Messrs. Harper & Bros., London and New York, a small volume with the above title (price 2s. 6d.). This volume comprises the interesting series of articles which not so long ago appeared in the *Times*, and which gave rise to a good deal of comment both in England and America. The articles are the result of an inquiry made by an English engineer, who visited those States of the American Union in which the chief engineering centres are located. The facts stated are of the deepest interest, and the conclusions arrived at of the weightiest import for Great Britain.

American high-pressure is well indicated by the following extracts:—"We hold (they say) that a furnace lining is good for so much pig-iron, and the sooner it makes it the better." "For anything that can be done without thinking we want to use a machine, so that men can be set free to work—the best part of them, their brains." "In England you are satisfied to go on in the same old way; Americans are never satisfied." "I can't understand how you folks in England do business at all. If our telephone and street car system were like yours, half of us would have to quit work to-morrow."

THE SECRET OF SUCCESS IN ENGINEERING.

What is wanted, if we are to maintain our national supremacy as engineers, is something more than copying the Americans and the Germans. Let us, by all means, study most carefully, not only American methods, but those of Germany, Switzerland, or any other country which is advancing in mechanical engineering work; and then, aided by such acquired knowledge combined with

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our long and varied experience, let us, urges *Engineering*, do our best to evolve still more improved methods of working, and—what is equally important—let us not hesitate to abandon methods which, however well they may have answered in their time, are now out of date. It cannot be too often repeated that he who copies is always behind him who originates, and it is the first in the race who wins.

Where the Analytical Chemist Comes In.

We have been slow, in this country, to appreciate, as it deserves, the work of the analytical chemist; and our tardiness has cost us much. Happily matters are now improving, although engineers, except in a comparatively few cases, are far from availing themselves so freely as they should of the material aid which chemists can frequently afford. I was much struck with this last week. The chief engineer of one of our well-known lines—upon which may be seen some of the worst protected iron and steel in the kingdom—having found out that most oxide of iron paints contain much carbonate of lime, and are therefore rapidly destroyed by locomotive smoke, etc., has now given it up, and will look at nothing but white lead. If he lives sufficiently long he will discover that when that is exposed to sulphurous vapours it changes colour, and the carbonate becomes sulphide of lead. English engineers in India and New Zealand are less obstinately conservative, and are now largely using Carbonizing Coating.

A Tribute to Hastings.

Under the above heading a kindly writer takes me to task in the *Hastings Mail* last week for mixed geography. The printer by putting a comma only after the word beyond instead of the proper stop used by me, ran one sentence on into the next, and so mixed things up generally. From Rolvenden church I have seen the play of light and shade said to arise from the waves breaking at Hastings, and I have driven from Rye to Rolvenden, uphill almost all the way, so that when my well-informed driver on the high ground between Hastings and Winchelsea pointed out Rolvenden in the far distance, I had no reason to doubt him, although as I am becoming more short-sighted I could not *swear* that I saw it. Like the old lady in the *Referee* story who would have it that her cyclist son had "punctuated" his tyre, on being told that she meant punctured, as the other thing meant using commas, full-stops, and so on, triumphantly declared that she was right, as the cyclist at once came to a full-stop!

Transvaal's Health Officer.

Dr. George Turner has been appointed by Sir Alfred Milner, medical officer of health for the Transvaal. Dr. Turner, who prior to the outbreak of the war filled a similar position in Cape Colony, has been provisionally acting as medical officer for the Transvaal, and his services have been recognised by Lord Roberts.

One Advantage of Wood Paving.

If a thirty-three pounds pull move a waggon over wood pavement, a pull of 147 pounds will be needed to move the same vehicle over a newly-gravelled road.

Felling a Tall Chimney.

The chimney shaft, 126 ft. high, at the brickworks at West Common, Lincolnshire, became unsafe, and it was ordered to be felled. The contractor removed part of the brickwork on one side, and then, by the application of screwjacks to the opposite side, the lofty shaft was forced over and thrown down in the space reserved for it. The diameter of the shaft was ten feet.

Fullerton's Full-flush Connections.

Messrs. Pryke & Palmer of Upper Thames Street, E.C., have drawn my attention to the above patent. Why anyone should give 1s. for a perishable rubber cone, when for 1s. 6d. they can get these permanently sound and effective joints of metal between flushing pipes and stoneware basins, is one of those things "no fellow can understand."

A Clever Bit of Engineering at Newcastle.

A novel and interesting engineering feat has just been accomplished on the Tyne by moving over into their place the spans and roadway of the bridge connecting Newcastle and Gateshead, which had been built 4½ ft. to the eastward of the position they were ultimately to occupy. The building of the bridge has been remarkable as an example of modern engineering practice. An old bridge existed, and the new bridge has been built on precisely the same site the old one occupied. The traffic has yet gone on uninterruptedly. The new piers were built round about the old ones, and the roadway and spans were erected a little above and 4½ ft. to one side of the old roadway and spans, a temporary footway meanwhile being provided for foot passengers. The old piers having been taken away the new roadway was lowered to its proper level, and afterwards moved over into its permanent position This was accomplished by means of hydraulic jacks. The total weight of the bridge was 1,600 tons, and the jacks were capable of exerting a pressure of 1,500 lb. to the square inch. The bridge is built of steel and is of the American type, but the details are strictly in accordance with the best English practice. There are four spans, two of 252 ft., and each of the others 170 ft. The total length of the bridge and its approaches is 1,900 ft. The total weight is 2,900 tons. The bridge is carried on cylinder foundations, each 8 ft. in diameter and sunk to a depth of 50 ft. below low water. There are four cylinders to each pier. The engineers of the bridge are Messrs. Sandeman and Moncrieffe, of Newcastle, and the builders are Sir William Arroll & Co., Glasgow.

A MODERN VIEW OF LONDON CHURCH ARCHITECTURE.—XVII.

By T. F. BUMPUS.

(*Continued from page* 310.)

TURNING to the north-eastern districts of the metropolis, we find a group of churches belonging to the same school of revived ecclesiology as the one just described, and built between 1860 and 1870 from the designs of one architect in the old parish of St. Leonard, Shoreditch, and the more recently constituted ones of Haggerston and Hoxton.

Since the revival of the true principles of Pointed architecture perhaps no more remarkable cluster of churches from one hand has been built in this country. Each evinces a decided penchant on the part of its architect for Gothic of a foreign type—St. Michael's, Shoreditch, and St. Saviour's, Hoxton, having a somewhat Italian cast, while St. Columba's, Kingsland Road, and St. Chad's, Nichols Square, Hackney Road, recall as their prototypes some of the grand churches of North-Eastern France. Raised without exception in poor and painfully ugly neighbourhoods, the leading characteristics of this group of churches—veritable town churches, and not such as would stand equally well in country churchyards are, simplicity, yet dignity and grandeur of outline; absence of elaborate external detail, and a tendency to quaintness in certain forms, which reminds us of Butterfield, albeit the eye of their author for colour is safer and more equable; their almost total construction in brick, and the thoroughly work-a-day look of their internal arrangements.

Occupying the sites of humble mission stations planted in some of the poorest and most densely-populated quarters of the town, each of these edifices—built with the intention of carrying out her services in the stateliest manner—is a splendid memorial of the spirit of unselfish liberality and devotion which has been quickened in the Church of England during the half-century just passed.

A few words explaining the origin of the Haggerston churches may not be out of place here.

The name of their architect—Mr. Jas. Brooks—had come prominently before the world of ecclesiology about 1862 in connection with his skilful remodelling of the parish church of Haggerston—a specimen of the Parliamentary Commissioners' Gothic. It has a laughable tower, concerning which several droll stories were current at the time, and was completed in 1827 from the designs of Nash, of All Souls', Langham Place, celebrity.

St. Mary's, Haggerston, was the mother church of an immense district which, cut off from the old parish of Shoreditch, was at the close of the 'fifties in a state of

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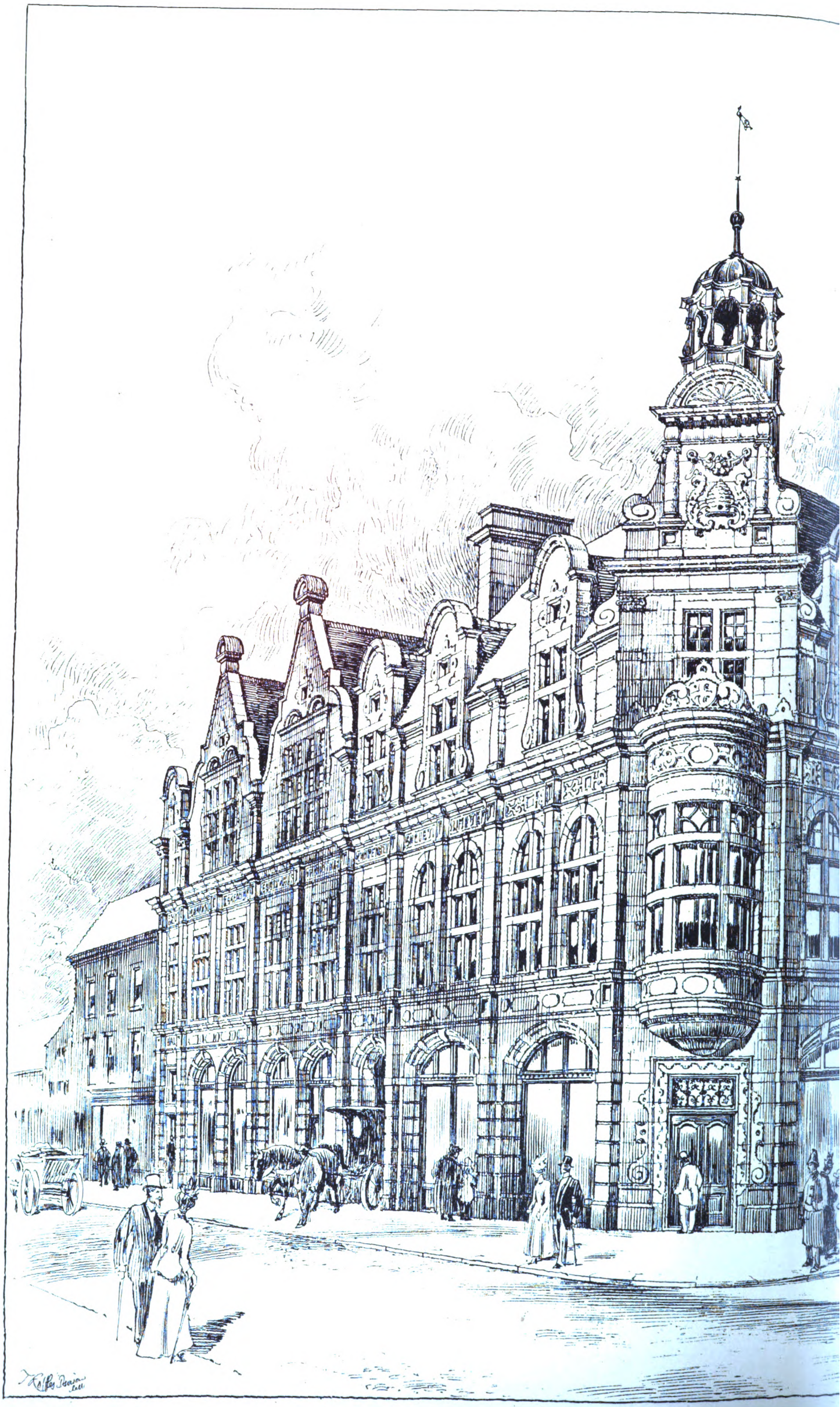

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Austin & Paley Architects

ORES. LANCASTER.

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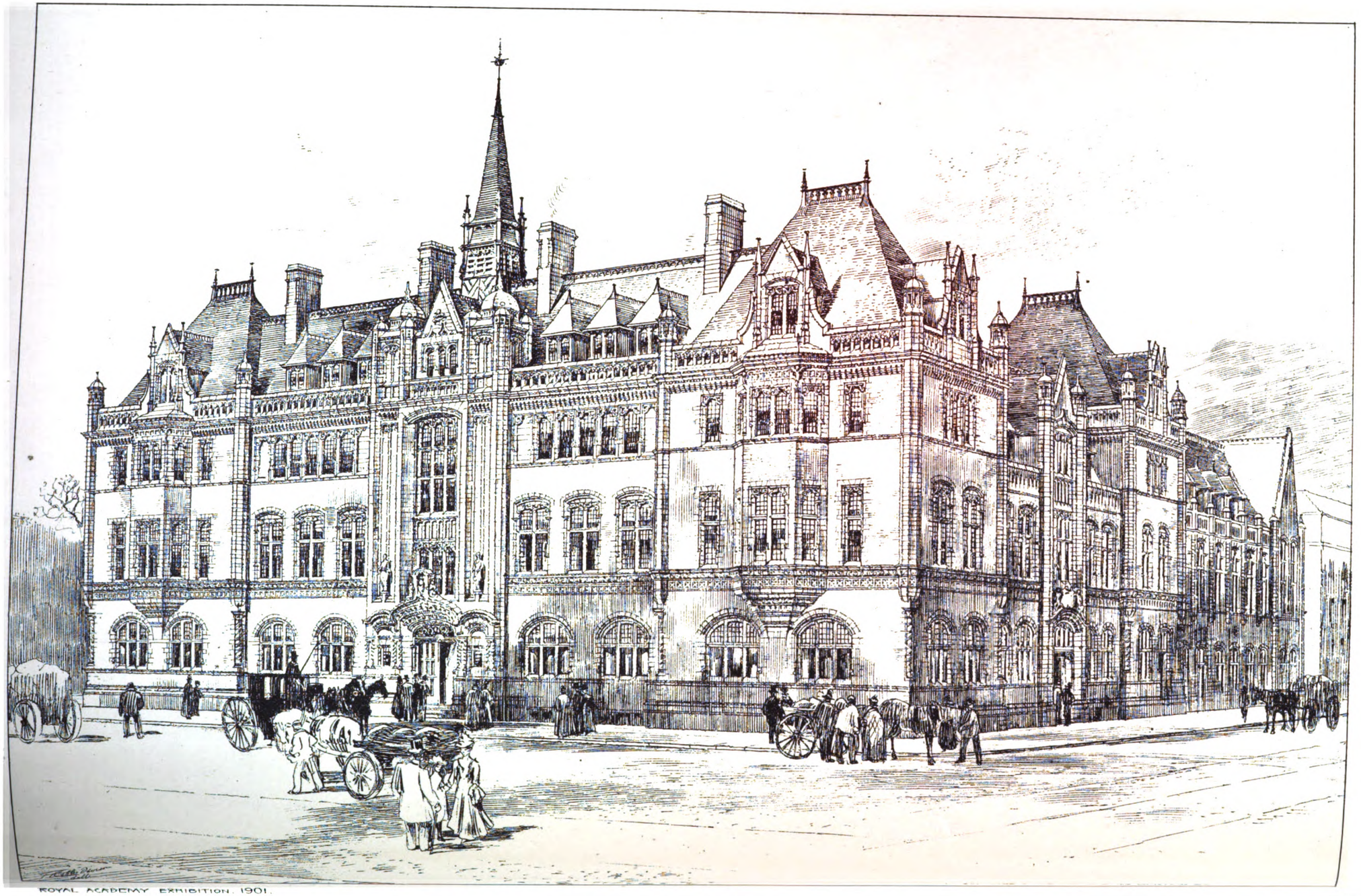

ROYAL ACADEMY EXHIBITION, 1901.

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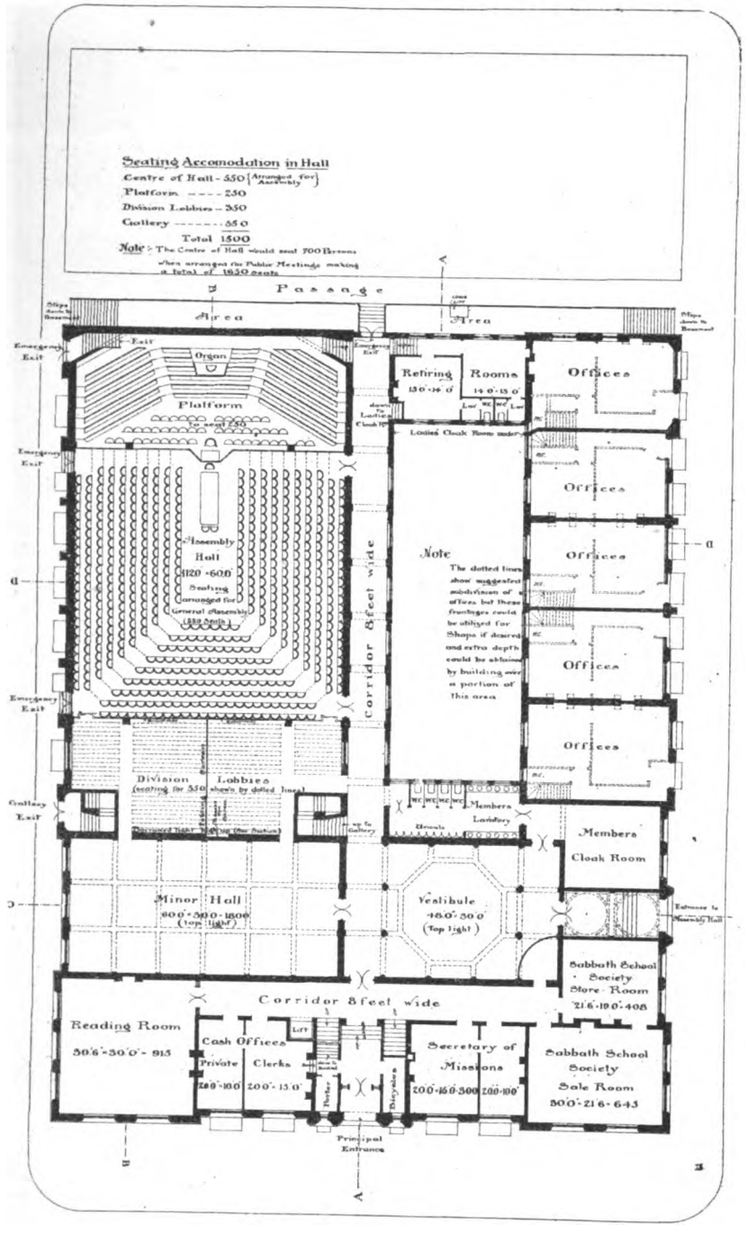

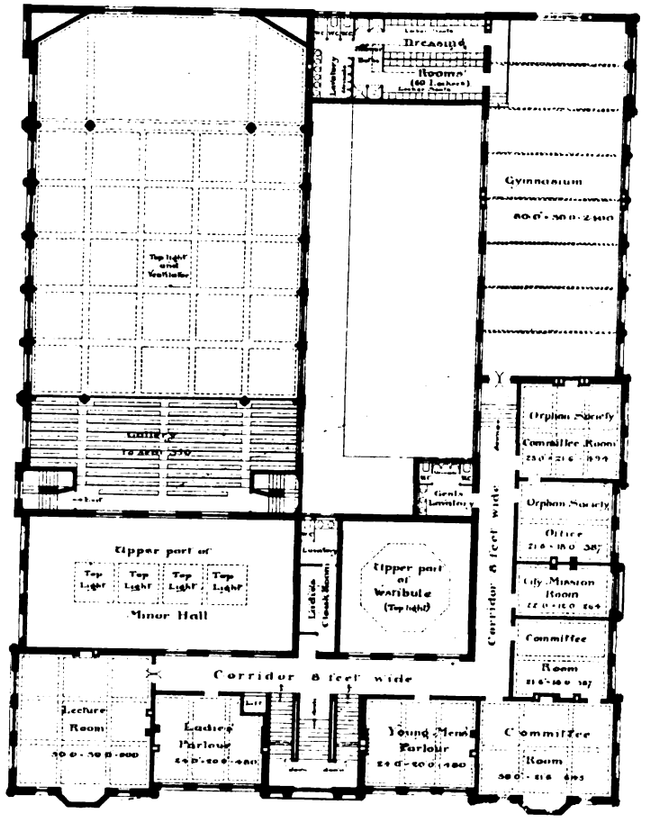

First Floor Plan

Second Floor Plan

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spiritual destitution so grave, that it was mentioned in Parliament. However, the appointment in 1859 of a new vicar—Rev. John Ross—completely revolutionized both the church and its services. Splendid individual munificence being forthcoming, the addition of a chancel to, and a re-arrangement of the nave of the Georgian Gothic parish church with its miserable fittings was determined on as a necessary first instalment of the amelioration of the surrounding district.

The work having been assigned, as mentioned above, to Mr. Jas. Brooks—at that time but little known in ecclesiological circles—St. Mary's, Haggerston, was re-opened on All Saints' Day, 1861, the artistic results accruing from this change being only equalled by the moral ones. Shortly after, several new districts, each equipped with the requisite machinery for Evangelistic work, were created out of the hitherto unwieldly old parish, and their chapels dedicated very appropriately to the three great British missionaries — Augustine, Chad and Columba. Subsequently another district was formed at the eastern extremity of the parish, neighbouring on Bethnal Green, and its church named after the Proto Martyr, St. Stephen.

Recurring to St. Mary's, Mr. Brooks' work there consisted chiefly in re-roofing Nash's old nave and the fitting it with open benches; in the formation, within the last two bays of it, of a chorus cantorum equipped with chancel and side screens with gates, and a handsome circular stone pulpit of somewhat Italianizing character; and in the re-chisseling of the ungainly pseudo-Gothic piers and arches into the best semblance of Middle-Pointed obtainable under the circumstances.

For the more dignified performance of the Altar Service, a sanctuary of good Geometrical Decorated character was thrown out, having a coved brick roof with stone ribs, and lighted by a rather low and broad window of five divisions, towards which Messrs. Clayton and Bell contributed (for the period of its insertion) some remarkably successful stained glass, representing the "Te Deum." By keeping his window thus high in the wall Mr. Brooks was enabled to gain ample space for a dignified background to the ornaments of his altar—the marble reredos with its large and striking white cross, having a somewhat Butterfieldian air.

The New Sanctuary being much narrower than Nash's Nave, Mr. Brooks, to mask the disparity in the width of the two limbs, had recourse to the "canted" bay, at that time a novelty in ecclesiastical designs, but which he was able to render a really graceful feature, piercing its wall with coupled arches, of somewhat foreign caste, and surmounting them with an unglazed Middle-Pointed window of three compartments. One bay of Nash's nave being left behind this "canted" one, a Vestry and Sacristy were gained in the angular space thus created.

Before the alterations of 1861, the nave of Haggerston Church had two tiers of carpenter's Gothic windows to accommodate the galleries. Both windows and galleries were retained at the time of the refitting of the nave, until 1863, when on the opening of the first of the district churches the former disappeared, and the latter gave place to the simple tier of three-light geometrical windows we now see. Several of these have received their complement of stained glass, which, although not praiseworthy, contributes to the ensemble of grandeur and religiosity reigning in a pile whose present aspect affords a remarkable proof of what the re-caster can do when he sets to work boldly upon the most untractable block. Prior to the ameliorations, the services at St. Mary's, Haggerston, were almost deserted, but on its reopening in the autumn of 1861 they became attended by large and devout congregations, and for some years were remarkable for the great excellence of their choral accompaniment.

The parcelling out of the old unwieldy parish of Haggerston into more manageable districts, and their provision with churches was due to various munificent individuals, but chiefly to the liberality of Mr. Richard Foster, at that time resident in Upper Clapton, and who, always to the fore in the cause of church extension "floated" the scheme with several thousand pounds; and to Robert Brett, then churchwarden of St. Matthias', Stoke Newington, whose devotion had founded that church, and whose indomitable energy and perseverance procured the means which led to its completion on so grand a scale. In the case of these churches of the Shoreditch and Haggerston schemes, Brett expedited their erection very considerably, not only by the proceeds resulting from the publication of such devotional works as "The Doctrine of the Cross" and "The Churchman's Guide to Faith and Piety," but by the putting forth of appeals such as only he knew how to frame, an extract from one of which, referring to the needs of Shoreditch is here appended:—

"Arise, cry out in the night: in the beginning of the watches pour out thine heart like water before the face of the Lord: lift up thy hands towards Him for the life of thy young children, that faint for hunger at the top of every street."—Lam. ii. 19.

"May I ask your earnest attention to this appeal, made on behalf of immortal souls whom Satan is blinding to their own destruction, and hurrying down swiftly to perdition; and for many of whom we may most fitly plead the dying prayer of our Blessed Redeemer on the Cross, 'Father, forgive them; for they know not what they do.'

"In the crowded courts and alleys of the populous parish of Shoreditch there are multitudes who, reared from infancy in lying, theft, and all wrong-doing, and daily witnesses of scenes of riot and debauchery, too terrible to name, have sunk down into the lowest depths of infamy and wretchedness. Hitherto the Church has made no effort to save them. The excellent vicar,* with a single curate, could not even touch the mass of iniquity which abounds in many parts of this overgrown parish. He has, therefore, resolved on making a vigorous effort to evangelise this abandoned population, through the agency of missionary clergy, assisted by a band of devoted women, who, for the love of God, have given themselves to the arduous work of seeking the lost, ministering to their necessities, and striving to bring them into the fold of Christ. . . . I entreat you, of your charity, to breathe one earnest prayer every night, before going to your own comfortable rest, for these perishing sinners, many of whom are pining in sickness, with no better bed than a little straw, and covered with a few tattered rags—many more are in the agonies of death, and about to meet the All-holy God."

Equally stirring was the appeal put forth by Mr. Brett for the promotion of the Haggerston churches, each of which he lived to see built and settled as the church of a new parish. Two of the four, St. Chad's and St. Columba's, were, as already stated, from the designs of Mr. Jas. Brooks, while the erection of St. Augustine's was entrusted to Mr. Henry Woodyer, and that of St. Stephen's to Mr. Francis Dollman, both of whom not long since passed over to the majority.

(To be continued.)

[In last weeks' issue of the account of St. Peter's, Vauxhall, on p. 310 in line 17 from top, for "spelunciar" read "speluncar].

OUR ILLUSTRATIONS.

BELFAST ASSEMBLY HALL: FIRST PREMIATED DESIGN.

RUPERT SAVAGE, ARCHITECT.

THIS design was awarded the first premium by Sir Thomas Drew, R.H.A., who acted as assessor in the recent competition, but the committee declined to accept any of the designs submitted in the competition, and appointed a firm of Belfast architects to carry out the work.

We have already commented on the result of the competition as an object lesson. The result was so unsatisfactory as to elicit formal protests from the Royal Institute of British Architects, the R.I.A. of Ireland, and the Belfast Architectural Association.

The perspective view appears in this year's Royal Academy Exhibition.

CO-OPERATIVE STORES, LANCASTER.

AUSTIN AND PALEY, ARCHITECTS.

THIS admirable Renaissance building is now, we believe, being erected in Lancaster. One cannot help wondering why good current work of this kind does not find its way on to the walls of the Royal Academy.

* Rev. T. Simpson Evans, who held the living from 1842 to 1880, and one of the most prominent Churchmen of his time.

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SOME MORE "RECENT BUILDING IN MANCHESTER."

ANOTHER of the excellent series of articles on recent architecture in Manchester appears in the *Manchester Guardian* of the 6th inst. We quote it as follows:—

MISSED OPPORTUNITIES.

St. Athanasius used to say, "One must not be tired of repeating." The same faults reappear, so that very much the same criticism has to be applied again and again to the buildings rising up in our midst. At Old Trafford, on the way to the Ship Canal, is a fine pile of building bearing the name "Duckworth's, Manufacturing Chemists," but its redness is too uniform. The walls and front roofs and the doorways and window openings are all of a vivid red without any relief, and such good material has been used that the vividness of the red will probably remain. Had there been better detail—for the detail is not equal to the general design—and if two well-chosen colours (say such as there are at St. Mary's Hospital) had been used for the terra-cotta and brick work, and brown or purple tiles for the roofs, this building would have taken fairly high rank. There are slated roofs behind. It would have been better to have chosen slates or tiles, and have kept to one, for the same building. Here and there in Manchester are some wonderfully good sites. Look at the north end of Albert Square, or the east side of the Cathedral Yard, or the north and south ends of Ardwick Green, or the south-east corner of Albert Square. How have these grand opportunities been used or missed? In Albert Square the great mistake made in Liverpool is not being repeated, namely that of trying to design the range of new buildings in the style of the town hall. Civic Buildings, though not very powerful or original, is a distinctly satisfactory building in its general treatment and careful detail. But why are the more easterly chimneys brick? They are much seen.

WHY SHOULD ALL CHIMNEYS BE SO COMMONPLACE?

And why are all the chimneys so commonplace? There are endless examples of good chimneys all over the country and abroad. In many a small town or village beautiful chimneys are to be seen, the making of the house, or shop, or lodge, or cottage, of which they are part. In days gone by chimneys were welcomed in a design, and they helped much in imparting life and vigour. Now they have come to be regarded by the public with regret or reproach, and the feeling is almost justified by the unworthy treatment they often receive. In this Albert Square building, too, there is, in the side street, brick just "butted" up to the stone, with no more blending than of oil and water. The skyline has obviously been considered, but not worked out quite sufficiently. The roof dormers would have been better for giving light, and also in appearance, if of twice or thrice their size.

LACKING THE RESPECT DUE TO A CHIMNEY.

The Whitworth Hall of Owens College grows on one as it grows. There is very little carving, and that little is well placed. The heraldic work will, perhaps, yet be a little more boldly cut. At Oxford and Cambridge the college arms are carved, as a rule, with daring boldness, yet with such excellent effect that others might well take courage. In this building, too, there is an entire avoidance of the sort of "ornament" so much in vogue, and used so often to hide the poverty of design. The south gable promises well, with its fine window flanked by plain masonry on either side. In this hall there is dignity without the cast-ironness which has hitherto abounded at Owens College. The seven pedestals, presumably for statues, on the east side of the hall lead one to hope that the figures will be very boldly and vigorously sculptured, not too smooth and delicate for the height—as are, for instance, the recent figures for the north-west tower of York Minster. One is sorry that in all this vast group of costly buildings the chimneys are in no case treated with the respect due to a chimney.

ELEVATION AND PLAN.

Those of the public who have not made a serious study of architecture should remember that the exterior taken alone is not architecture. The plan and arrangement of the interior must be considered in connection with the outward manifestation. A fine front may be little else than a mask, and however admirable in its way that may be, it is not architecture. The genius of Sir Charles Barry enabled him to clothe a convenient plan and effective interior with a stately and graceful outward form, witness St. Stephen's, Westminster, or many London clubs, or our own Athenæum before it was maltreated. Bridge Street Chambers have at the street level six shops with a centre door, the whole with a brick and stone front. The conditions and requirements are such as to lend themselves to an effective building, yet the result is somewhat tame and commonplace. Another building of much the same sort is Central Chambers, in Brazennose Street. Brick and stone make an admirable combination in a façade, but much depends upon the way they are disposed. The great block of building, the Corn and Produce Exchange, with shops, on the east side of the Cathedral Yard, has, with the Cathedral in the foreground, one of the best sites for architectural effect in the city. But it is all stone. Is it to match the Cathedral? one wonders. It would have been better for both, had much of it, if not nearly all, been red brick. A praiseworthy attempt to design on an exceptionally bold scale has been made; but it misses complete success, though it comes as near it, perhaps, as the National Liberal Club on the Thames Embankment.

BRICK AND TERRA-COTTA OR STONE.

Though in a confined and difficult site, it looks as if St. Mary's Hospital in Oxford Street was going to be, in outline and general design, one of the best of our brick and terra-cotta buildings. The colouring, too, is good, and will probably, if treated to the Lancashire yearly wash, remain so. It is not too magnificent to be suitable for a hospital, yet there is nothing too plain or paltry about it—except the back bit on the canal bank, which really does cry shame. The architect is a strong man; why did he not put his foot down and demand permission for a treatment consistent with the street front, if less costly than it. As to the washing of our buildings, when the best brick is used, rain, where it can get at the bricks, will keep them fairly clean. It is obvious, therefore, that careful washing of those parts which are more or less sheltered from driving rain would be effectual. With stone it is otherwise, in such smoke-laden air as this. Stone buildings, like trunks of trees, in Lancashire become and remain very much of one colour, if black be a colour.

WITHOUT VISIBLE MEANS OF SUPPORT.

One of the most conspicuous of recent buildings in Manchester is that on the south side of St. Mary's Gate. Here there has clearly been liberal expenditure, but the effect obtained is not commensurate with the efforts made in attaining it, and the ponderous mass of superstructure, seemingly carried on the thinnest and lightest of woodwork, excites (though no doubt it is really strong enough) an uncomfortable sensation. Higher up, again, the pair of wooden oriel windows of slim construction have the appearance of sustaining heavy stonework above. There is here a great deal of carving and ornament likely to catch the dirt.

OF BRIDGES.

All over the city one sees bridges—usually covered—high up, for access from one warehouse or other building to another. Such bridges might always be (without going as far as Lucerne for a model) picturesque and delightful. Yet is there one that answers this description? Even at the temple of learning in Old Millgate the covered bridge leading from the southerly part to the northerly is not only as hideous in itself as it well could be, but it partially conceals and wholly mars the ancient and picturesque east gateway to the Chetham Hospital. It might have been put there to show the boys of the Grammar School what should be avoided. One thing, by the way, which is not avoided enough in our recent buildings is "the diseased desire for uniformity," which craves to make everything correspond with something else. The name of a suburban villa is often on both gate piers, even if not 1½ yard apart. It would be more useful if, the name of the house being on one, the number of the house and the name of the occupier were on the other.

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CHURCHES AND TIN TABERNACLES.

There would be more churches to notice were it not that a "tin tabernacle" so often acts as *locum tenens* for a brick or stone building. There is the easterly portion of a church in the Wilbraham Road, south of Manchester. It looks fairly church-like, and there is a welcome absence of vulgarity. In St. Werburgh's brick and terra-cotta are mainly used, and the effect would have been better if the red bricks and the terra-cotta had been brighter. This church has the fault, common to so many such buildings, of being a rather commonplace stone design carried out in plastic materials.

THE INFLUENCE OF MATERIALS ON DESIGN.

It adds much to the interest and artistic value if the materials are allowed to rule, or at least to influence, the design. Canon Hoskyns at the Town Hall on the 11th ult. spoke up well for the right kind of churches. He showed the benefit to the community of dignified and beautiful churches, especially in squalid districts. He dwelt, too, on the importance of making the inside specially impressive and devotional. It would be well if the Vicar of Bolton would speak oftener and at greater length on this subject, which he is so well qualified to handle. If only the Chair of Architecture at Owens College, which seems to come nearer, be established, and be, as it doubtless will, worthily filled, it is to be hoped that in time not only will more of our architects learn architecture as an art, but that the public will become sufficiently interested in the art to be able to distinguish good work from bad.

THE RESULTS OF SOME TESTS WITH FIRE-RESISTING MATERIALS.*

BY ELLIS MARSLAND, HON. SEC. S.A.

BY the kind permission of the executive of the British Fire Prevention Committee I am enabled to give some account of the tests and experiments with fire-resisting materials conducted by them, in the hope they may be of interest to those engaged in building operations and to those who take or have any interest in preventing the spread of fire.

The work of the committee, so far as it has been undertaken, may be divided under four heads:—Firstly: Experimental tests with floors, commencing with simple forms of construction deemed to be fire-resisting only, and proceeding to more complex forms deemed to be fire-proof. Secondly: Experimental tests with fire-resisting partitions of various constructions. Thirdly: Experimental tests with doors of various constructions, both of wood and iron, or a combination of both. Fourthly: Experimental tests with protective coverings to openings and methods of glazing which in themselves form a protection from fire. This last is a very important factor in dealing with fire prevention, as, however fire-resisting a building may be in itself, unless it can resist fire from the outside it is as liable to destruction as the most inflammable building.

In commenting upon the different forms of construction and their behaviour under the fire tests to which they were submitted, I do not propose to mention any names for reasons that may be sufficiently obvious, but shall merely differentiate between the test initiated by the committee and those submitted for test by manufacturers; any further information is to be obtained in the official published reports.

Starting with experimental tests with floors, the first to which I shall direct your notice is an ordinary floor with deal joists and floor, the soffit of which was protected by plaster, termed asbestic plaster. This was applied on ordinary wood lathing and the thickness of the plaster after completion was about 1⅛ in. On drying this reduced itself to about ⅞ of an inch, and during the process of drying cracks developed over the surface. Before the test these were stopped, and the appearance of the soffit as you now see it is due to this cause.

The testee decided to have a 45 minutes' test, 15 minutes at a temperature not exceeding 500 deg., then a gradually increasing temperature for the remaining 30 minutes up to 1,500 deg. The summary of effect is as follows:—No perceptible difference in the ceiling was observed during the progress of the test. The application of water caused no injury to the ceiling. No portion of the ceiling fell either during or after the test. When examined after the test cracks had developed over the surface and some of the wood laths were charred, but none had ignited. This test may be considered satisfatory as the object was attained, viz., to render the floor fire-resisting for 45 minutes, which would, under ordinary circumstances, have allowed the occupants in the rooms over to have escaped.

The next test is of a similar nature. The floor was ordinary joists and boarding, but the protecting material to the soffit was slag wool 1¾ in. thick. This was secured with screws to the soffit of the joists and a ⅞ in. match boarded ceiling was placed under the slag wool. The testee decided to have a test of one hour's duration with a gradually increasing temperature to 1,800 deg.

The summary of effect was as follows:—At the conclusion of the test, the flooring on top was, as far as could be seen, uninjured, and when the joists were examined they were sound. The boarded ceiling had, of course, disappeared, but the slag wool remained in position and had protected the floor. A good deal of heat was retained in the floor, and at one point, where water had not been applied, a small hole was burnt in the flooring some three hours after the test was concluded. This test may also be considered satisfactory, as it retarded the spread of the fire for at least an hour.

We now come to a test of an interesting nature as showing the fire-resisting qualities of simple baulks of timber laid side by side, any spaces between being filled with fire clay grout, the soffit not being protected in any way; the thickness of the baulks was 9 in. This was the committee's own test, and it was decided to have an 80 minutes' test with a gradual temperature up to 2,000 deg. Fahr.

The result was that the under surface of the wood beams was charred to an average depth of about 2 in., but beyond this no damage was done. The view shows the soffit of the floor after the test, and the following one the end of one of the baulks after removal. The test clearly demonstrates what fire-resistance there is in such a floor, but it must be carefully borne in mind that no space must be left between the timbers that is unfilled by the grouting, otherwise the fire draws up through and spreads to the next floor.

Section 74 of the London Building Act provides that, in premises exceeding 1,000 square ft. in area and used partly for purposes of trade and partly as a dwelling house, the part used for purposes of trade shall be separated from the part used as a dwelling house by floors and walls of *fire resisting* materials. This does not, of course, imply that the floor is to be *fire-proof*, but the floor is to be sufficiently fire-resisting to prevent the spread of fire at least for a reasonable time to give an opportunity for the inmates above to escape. And in the schedule of materials deemed to be fire-resisting, concrete filled in between joists of floor is so deemed.

The commitee thought that a test in this direction would be of considerable interest and yield some useful information. Accordingly they made preparations for the simplest interpretation of the section, and arranged a test as shown in the view. With 7 by 2 joists, ⅞ in. flooring, coke breeze and Portland cement concrete, 5 to 1, filled in between the joists to a depth of 5 in., and kept in position by 1 by ¾ in. fillets nailed to the sides of joists 2 in. from the bottom, a ceiling was nailed on to the soffit formed of ⅝ in. match boarding. The time decided for the test was 75 minutes, commencing with a temperature of 500 deg. and increasing to not more than 2,300 deg. The floor also was to be loaded with 100 lbs. per square ft. distributed. The result of the test far exceeded the committee's expectations, it was not till after 82 minutes the floor collapsed.

The summary of effect is as follows:—In 15 minutes all the boarding to the soffit was consumed; in 54 minutes flame came through the floor between the last joist and the wall.

I should like to point out here what an important part the 1 by ¾ fillets played in the construction of the floor in preventing the fire getting through, and it was in consequence of the fillets being omitted on the outer side of the two end joists that the flame came through there, and these two joists were the most damaged.

* Read before the Society of Architects, April 25th, 1901.

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The concrete between the two east joists fell out in 74 minutes, meanwhile the fire had been gradually eating its way up the other joists some 2 to 2½ ins.; they being thus reduced from 7 ins. to 5 ins. or 4½ ins., could no longer sustain the weight of 100 lbs. per square foot and the floor and load collapsed in 82 minutes. This was a very severe test for so light a floor, and I think you will admit that it stood it bravely. The view shows the remains. The floor boards are not burnt, but only blackened by the smoke.

A test of a somewhat similar character to the one just mentioned was instituted to discover the fire-resisting qualities of different descriptions of concrete.

The floor now before us was constructed of 3 by 9 deal joists spaced 16½ ins. centre to centre, which gave seven bays. Two of these bays were filled in to the full depth of the joists with coke breeze and cement concrete, 6 to 1. The next two bays were filled in with pit ballast and cement concrete, 6 to 1, and the remaining three bays were filled in with concrete composed of pit ballast three parts, coke breeze three parts, and cement one part. The concrete was supported between the joists by 1½ ins. by ⅞ in. fillets. The soffit of the ceiling was plastered render float and set, and ⅞ in. flooring was nailed on top of the joists to complete the floor.

It was decided to test this floor for one hour and a half to a gradually increased temperature up to 2,500 deg. Fahr., and then to apply a stream of water for four minutes.

The summary of the test was that after a few minutes the plaster of the ceiling began to fall, whereupon the lower edges of the joists became ignited and gradually burned upwards.

At the end of the period the whole soffit of the floor was seen to be fully incandescent, particularly that in the coke breeze and cement bays. On the application of water the soffit of the ballast and cement concrete and the ballast breeze and cement concrete immediately disintegrated, and about 3 in. in depth of it fell. The coke breeze and cement alone was not affected. The floor remained in position at the conclusion of the test, but appeared seriously weakened and deflected.

It is to be regretted that it did not remain in position sufficiently long to be photographed, but after a test of this description a good deal of latent heat remains in the materials, and the joists being of combustible material continued to smoulder, and the result was the collapse of the floor five hours after the test. On examining the remains the joists were found to be burnt through from 2 to 6 in. deep, and tapering to a further depth at the ends. The boarding was found to be slightly charred on the underside and at the joists, but otherwise was sound.

It could not be said the fire had passed through the floor, although smoke came through, and I think the floor may be considered a fire stop, although the weight of the concrete caused the collapse of the floor, and might constitute a source of danger on that account.

The behaviour of the ballast concrete shows it an undesirable material for fire-resistance, while coke breeze has many advantages. I might add here that from my observation of the tests conducted by the committee it is the more porous and light of the incombustible materials that are the most fire-resisting.

The experience gained by the last two tests paved the way to the next; both the previous tests had shown that if the soffit of the joists had had furthur protection the fire-resistance of the floor would have been greater, consequently a test was arranged as shown, with an expanded metal ceiling suspended 2 ins. below the bottom of the 7 by 2 wooden joists, which formed a centering for the concrete as well as a key for the plaster. The construction may be gathered from the slide, and will need no further description beyond that the concrete below the joists was of dry ashes and Portland cement, and that between the joists was composed of coke breeze three parts, dry ashes two parts, and Portland cement one part.

The tests was arranged for two hours, which is the longest time yet given for a floor formed partly of combustible material. The temperature was not to exceed 2,300 deg. Fahr., and to be followed by a stream of water for two minutes, The floor also was to be loaded with 100 lbs. per foot distributed.

The summary of effect is very short:—In 28 minutes plaster began to fall in patches from the ceiling, and continued to fall at intervals till the end of the test, when water was applied, and further plaster was washed away. No other effect of the fire was noticeable, and at the conclusion of the test the floor was intact and carried its load. This floor did not subsequently collapse, although it smouldered all night, and I am enabled to show you its condition the next day from the underside and from the top. It was found that all the joists had been more or less damaged by the fire smouldering all night, portions of them were quite consumed, leaving the matrix only in the concrete. The least damaged of the nine joists forming the floor was the centre one, which was intact but for a piece about 12 in. long and 5 in. deep, which was consumed about 15 in. distant from the south end.

This irregular consumption of the joists I am inclined to think was due to the difficulty of so filling in the concrete on the soffit of the joists as to form a complete protection; the vertical strips of expanded metal which carried the horizontal portion conducted the heat up the joists, and appeared a source of weakness so far as the fire-resistance was concerned.

The next test, which was submitted by a manufacturer, deals with a floor supported by 9 by 3 wooden joists with a terra cotta wired lath suspended ceiling, and an air space between the ceiling, and the concrete filling between the joists. The construction can best be gathered from the slide. The lathing was spread over the top of the joists, and depressed in the centre to the shape of an inverted arch, upon this the concrete was placed to a depth of 7 in. in the centre, which when levelled, brought it 2 in. thick over the top of the joists. The concrete was of Portland cement and washed sand, in the proportion of one yard of sand to two bags of cement. The suspended ceiling was formed of terra cotta wired lathing secured to iron rods fixed to the soffit of joists with iron hooks. Ordinary 3-coat work was applied to the lathing, but a proportion of plaster of Paris was incorporated with the material. The thickness of the plastering was 1½ ins.

The test was arranged for one hour and a quarter, the temperature was not to exceed 2,000 Fahr., and the floor was to be loaded with 56 lbs. per foot, distributed.

The summary of the effect was, that a considerable portion of the plaster ceiling fell during the test, some of the lathing being bare before the test closed. The floor cracked at each side to the extent of ⅛ in., and dropped ¼ in. When water was applied, smoke, steam and sparks came through the cracks in the top of the floor. One of the joists carrying the ceiling was entirely destroyed, two partially so, and one though discoloured was practically sound. This floor did not collapse, but its supports were practically destroyed; it trusted for its fire-resistance to the suspended ceiling on the terra cotta wired lathing and air space, but after the ceiling was pierced, the heat had full play around three sides of the deal joists, and so brought about its ruin.

PLAISTOW'S new public baths were opened on the 2nd inst. The baths have cost, exclusive of furnishing, etc., £22,308. There are two large swimming baths, with warm baths and the usual conveniences. The first-class swimming bath is 100 feet and the second-class bath 60 feet long.

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The British Architect.

LONDON: FRIDAY, MAY 17, 1901.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.—The FINAL AND SPECIAL EXAMINATIONS will be held from the 21ST to the 28TH JUNE inclusive. Applications must be sent in on or before the 24TH MAY.

The Testimonies of Study, &c., with the necessary fees, must accompany the applications, all of which are to be addressed to the undersigned.

W. J. LOCKE,
Secretary R.I.B.A.

No. 9, Conduit Street, London, W.

THE ARCHITECT AS A MAN OF BUSINESS.

THERE is so much in the practice of an architect that calls for constant diligent oversight in regard to business detail that it is readily conceivable how oftentimes an architect comes to be regarded by the public as more or less of a builder or surveyor rather than an architect. And, after all, this ability to manage and administrate affairs is one of the first qualifications of the architect so far as his client is concerned. Not all the fine architecture in the world will compensate for the practical inability of the architect to secure for his client a sound, well-planned building at a reasonable cost. The client may, or may not, understand the worth of a building from an artistic point of view, but he is pretty soon made aware of any shortcomings in plan, defects in materials or construction, or excessive expenditure. The client's "money's worth" lies chiefly, if not altogether, in the quality of the building as a building, and not in its appearance. This same principle applies to the architect's work all through. His artistic power and ability may be included in the payment made for his services, but it is his work as a constructor, and a man of affairs, that the client chiefly regards as the *quid pro quo* for which he pays the architect his 5 per cent. commission. Just in proportion as the architect fails to prove himself not merely a clever architect but a capable man of business, just so far does his professional reputation suffer in the estimation of his client.

By way of illustration we might refer to a recent case in the law courts in which the owner of certain houses, newly erected, appealed against the decision of a magistrate making him responsible for certain fees payable to the district surveyor under the London Building Act of 1894. The builder, of course, should have paid the fees, the owner having paid the builder the amount due to him under the contract, which included the fees in question. But the builder became insolvent and not having paid the said fees to the district surveyor the amount was claimed from the owner. The owner naturally demurred to paying twice over, but the magistrate decided against him, and upon appeal this decision was upheld by the Lord Chief Justice and Mr. Justice Lawrance, before whom the appeal was tried, though further leave to appeal was given. Admittedly this is a hard case, but at the same time if the owner employed an architect, and we presume he did, then it was surely part of the architect's business to call for and inspect the receipts for the fees which it was the builder's duty to pay on behalf of the owner. Why this was not done we are not told, nor, indeed, is any question of negligence on the part of the architect—if any—suggested. Still it shows how any laxity of business care and foresight, in safeguarding the monetary interests of the client, might easily involve loss of money to the client and reputation to the architect.

Another instance of the needs-be for business perspicuity and care on the part of the architect is furnished in the case decided in the King's Bench Division, on Saturday last, by Mr. Justice Bruce. This was an action arising out of alleged negligence by an architect in the valuation of some property, whereby the plaintiff was induced to advance a certain sum of money upon it. Afterwards, when the property was put up to auction on behalf of plaintiff, it failed to secure a bid of more than about a third of the money advanced, and it was alleged at the trial of the action that the full value of the property was far below that named by the defendant architect. The defendant's case was that he relied on the statements of the mortgagor as regards the rental value of the property, because the plaintiff had referred him to that gentleman for particulars. Mr. Justice Bruce, however, did not think that this amounted to a direction to defendant to rely absolutely upon the mortgagor's particulars without further due enquiry and verification. The rental value had been put too high, and Mr. Justice Bruce worked out the figures as giving security for £666 only, as against £1,350 named by the defendant. The further pleadings of defendant that the property had been deteriorated by the erection of inferior property, and of a mill, in the vicinity, Mr. Justice Bruce did not consider proved by the evidence, and in the end he gave judgment for the plaintiff for £437 4s. 8d., with costs.

This case, whilst it does not apply to the usual run of an architect's practice as designer and constructor, has a suggestive lesson in it for those architects who, in the course of their work, may be called upon to exercise the function of a valuer. It also further emphasises the fact that in all his work it is as a practical man of affairs—a man of business—that the public principally regard the architect, and this needs ever to be remembered. The value of an architect's services is primarily comprehended in the practical outcome of the design, and not in the design itself, as a work of art. Skilful planning, sound construction, and full value in labour and materials, are the first and most important considerations, so far as the client is concerned. And if he secures these essentials, he will not greatly distress himself as to the failure of the architect as an artist.

A MODERN VIEW OF LONDON CHURCH ARCHITECTURE.—XVIII.

By T. F. BUMPUS.

(*Continued from page* 337.)

HAVING thus sketched in outline the history of those remarkable contributions to the ecclesiology of the metropolis, the churches of the Shoreditch and Haggerston schemes, we may devote ourselves to a brief consideration of their most salient architectural points, taking them in the order of their completion.

In limine, a few statistics may not be uninteresting to the student, relative to the dimensions of the three finest of these churches, which, as far as can be accurately ascertained, are:—St. Michael's, Shoreditch: nave, 90 ft. by 27 ft. 9 in.; height, 42 ft. to wall plate and 70 to ridge; aisles, 12 ft. 2 in. wide; chancel (including sanctuary), 40 ft. 6 in. long by 24 ft. 6 in.; 38 ft. 6 in. high to wall plate and 62 to ridge. It will accommodate 1,200 persons.

St. Chad's (Nichols' Square, Hackney Road):—nave, 85 ft. 9 in. by 24 ft. 6 in.; 40 ft. 6 in. high to wall plate and 65 ft. 6 in. to ridge; aisles, 9 ft. 3 in. wide; chancel, 40 ft. 6 in. by 24 ft. 6 in. to wall plate, and 46 ft. 6 in. to ridge. Seating capacity, 1,150.

St. Columba's (Kingsland Road):—nave, 93 ft. by 28 ft. 3 in.; height, 48 ft. to plate and 80 ft. to ridge; aisles, 7 ft. 6 in. wide, chancel (inclusive of tower beneath which it is formed), 50 ft. 6 in. by 22 ft. 9 in., and 52 ft. 6 in. to vault, 80 ft. to ridge. It is seated for 800 but can accommodate 1,200.

St. Michael's, Shoreditch (Mark Street, Paul Street, Finsbury)—consecrated St. Bartholomew's Day, August 24th, 1865—is a most stately church, very lofty and very long, and forming with the contiguous block of schools, clergy-house, convent, and hospital of St. Mary at the Cross, an assemblage of building which comes as a welcome relief to a district quite overwhelming one with a sense of its utter meanness, ugliness, and degradation.

The accompanying illustration of St. Michael's, Shoreditch, whose erection, it should have been stated, was due to lavish individual munificence, precludes our dwelling at length upon its external features.

The material is yellow brick, banded and patterned with red, and in style the church may be termed Transitional from First to Second Pointed—that epoch of our ancient architecture in which an adumbration of tracery

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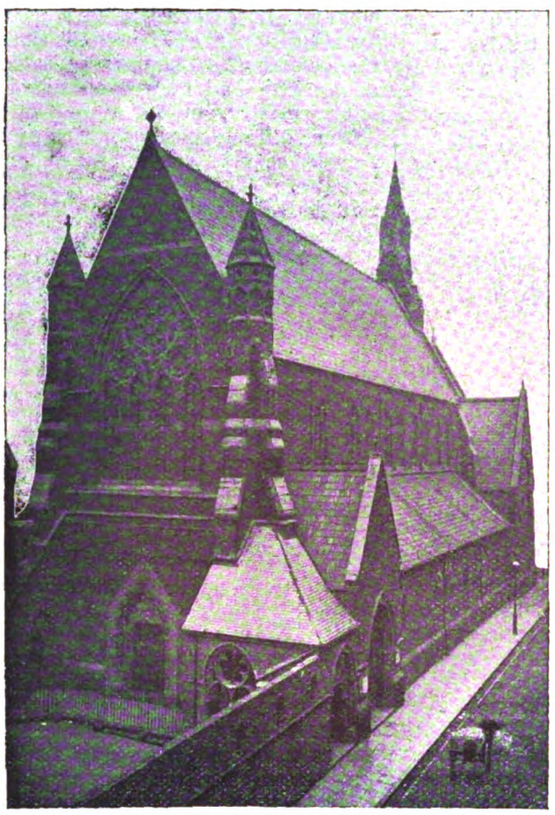
is perceptible, but the whole exhibits very free treatment. One feature noticeable, not only here but in the other churches of this group, is the grand mass of roof planned with an ability truly artistic; another the almost total absence of buttresses, the south aisle wall, flush with the pavement, forming a portion of one side of Mark Street;



ST. MICHAEL'S, SHOREDITCH.
Jas. Brooks, Architect (1863-65).

a third, the great dignity lent to the western façade by its flanking turrets into which, as well as the very graceful and appropriate spirelet at the junction of the nave and chancel stone is cleverly mingled with brickwork. Access to this feature, an extremely refreshing one after the ordinarily employed gabled bell-cote, is gained by a pretty circular staircase turret on the north side, and which as well as the noble appearance presented by the church's eastern elevation, is worth turning the corner of Mark Street to see.

A sensible chimney-shaft, and not a wretched makeshift concealed in a cross or a pinnacle, rising from the chancel wall against which the sacristy abuts, is also worthy of notice.

Throughout St. Michael's the tracery partakes of the "plate" character. Into the great western window, shown in the illustration, brick largely enters, but that at the opposite end has its five lights and three surmounting circles pierced in stone under one containing arch. A rose, likewise plate traceried, lights the quasi-transeptal south aisle of the chancel, which, built originally for the reception of the organ, has been converted into a chapel for low celebrations and other offices not sung *in choro*. Windows of two compartments each light the clerestory and aisles, those of the latter being distributed in pairs somewhat eccentrically, as the visitor to St. Michael's will discover when he passes inside that edifice, neither coinciding with the nave bays nor being even correspondingly arranged in the opposite aisles. Only a portion of the narthex which it is intended shall be carried along the west front, and also communicate with a cloister surrounding the quadrangle between the church and the conventual buildings, has as yet been put in hand, *i.e.*, the south entrance, whose wrought iron gate deserves notice. But this is very graceful, and gives promise of the fine effect that will be produced by the completed work. Mr. Brooks' plans likewise include a tall north-western tower and low quadrilateral spire, but other matters having made calls upon the church's finances, its erection does not seem likely to become a *fait accompli* at present. At any rate, its absence entails no loss upon the church's grand exterior, though the addition of such a feature would be of considerable service in indicating the whereabouts of St. Michael's, flanked, as it is, north and south, by a prodigious regiment of "model" lodging houses. These, to a certain extent, tend to dwarf the real proportions of the edifice, but such an impression vanishes when the student crosses the threshold of the south door and, taking his stand beneath the west window encounters no rival to detract from its positive proportions. Designed for an imposing ritual, St. Michael's, it may be here stated, was reared over the temporary church which served for the mission district, as may be seen by reference to a woodcut in the *Illustrated London News* of the time.

The student of modern church architecture can, in visiting St. Michael's, hardly fail to be struck with the influence of the late Mr. Butterfield pervading this majestic structure. This is observable in Mr. Brooks' employment of the narrow western or narthex bay of the nave; in the treatment of the lean-to aisle roofs, raftered with plaster between; in the arrangement of the patterned brickwork above the somewhat low-pitched chancel-arch, which, composed of two stone ribs apparently about four feet apart and starting from corbels affixed to flat pilaster-like responds, carry a brick arch sustaining the above noticed belfry; and in a very considerable degree in the *instrumenta* of the chancel and sanctuary. The nave arcade of stone—five bays in length exclusive of the narrow one into which the South porch opens, and whose arch mouldings die off into a square pier—is lofty, and formed of one large chamfered order springing from cylindrical piers with simply-moulded capitals.

The clerestory, where the windows, regularly-spaced, are arranged in pairs, is not very lofty, but the roof, gabled and open to the ridge, quite devoid of tie-beams, is a great factor in the height of this church, which to the ecclesiologist taking its interior at a coup d'œil will recall St. Matthias', Stoke Newington.

A graceful iron screen with a polished metal cresting, and raised upon a stone plinth relieved at intervals by circles with tiles let into them, separate the nave from the chancel, and materially enhances the long-drawn perspective without impeding a view of the ministrants at the high altar. In the chancel, the arches spring from graceful half-clusters of shafts, and are fitted with wrought-iron grilles and gates, as at St. Alban's, Holborn, but, like the Sanctuary, is so extremely dark from the absence of side windows, that an abundance of white in the otherwise excellent commencement of stained glass made by Messrs. Clayton & Bell in the circles and quintuplet of lancets, composing the east window, is a great desideratum.

The stained glass in the first window of the nave on the north was here at the consecration of the church, 1865. It represents the Baptism of our Lord, and Blessing Little Children, and is a good specimen of Clayton & Bell's work of that date. Of the reredos, the portion immediately above the altar is only at present complete, and this, from the great width of the sanctuary and the absence of side hangings, has a somewhat isolated appearance. A gable of alabaster encloses three arcades of that stilted kind so frequently employed by Mr. Brooks, filled with a sculpture of the Crucifixion and attendant effigies of St. Mary and St. John, with backgrounds of gilt mosaic from the hand of Earp. It may be remembered by some that a charcoal cartoon for this group gave rise to one of the several painful incidents that occurred to mar the consecration of this noble church—Archbishop Tait, then Bishop of London, refusing to proceed with the ceremony until the incumbent and the architect had signed an undertaking to remove the cartoon in the event of Sir Travers Twiss deciding it to be illegal. The day succeeding the consecration, Robert Brett—one of St. Michael's most untiring promoters—waited on Sir Travers Twiss with the drawings of the reredos, and after careful examination, he decided that there was nothing illegal in the design, so the work—a joint memorial, by the Rev. T. Simpson Evans, Vicar of Shoreditch, and Robert Brett, to a daughter each had lost during the building of the church—was proceeded with.

One of the other unpleasant incidents in connection with Archbishop Tait's visit to St. Michael's had reference to the vesture of the clergy and may be related here. The occasion of consecrating this church being felt by the local clergy to be one of more than ordinary importance, a large

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gathering of them awaited the Bishop in the vestry on his arrival at the church, and in order to do greater honour to so festal an event, many had provided themselves with white stoles, at that time by no means so commonly worn as now. The Bishop desired, immediately upon entering the vestry, that four vases of flowers, which had caught his eye on the passage thither, should be removed from the Holy Table.

With this request the incumbent complied. Presently the Bishop having surveyed the assembled clergy, observed the white stoles, one of which was said by its wearer to have been copied from that of the Venerable Bede. "Oh, Mr. ——, do take this off!" said the Bishop. He did so, and the Bishop then added: "I must ask the clergy of my diocese who are here to-day to wear the simple dress of clergymen of the Church of England." At this the priests were painfully shocked, and looked at each other as though they were at a loss to comprehend his lordship's real meaning, and a rather awkward silence ensued. Again turning to the clergy the Bishop said, in a very peremptory tone, "I must ask you to take off those things gentlemen!" Thereupon those of the clergy who were wearing coloured stoles, took them off and laid them in the vestry, replacing them by black ones, which, as they had small gold crosses embroidered upon them, the Bishop actually comanded should be worn *inside out*. While the service was proceeding, a newspaper reporter was admitted into the vestry, and on enquiry, note book in hand, what those stoles lying there were, was informed by a legal functionary, quite unversed in ritual matters, who was waiting there, "Oh! those are the ribbons which the Bishop made the clergy take off." Hence, the "take off those ribbons, gentlemen!" story so firmly believed in by ultra-Protestants. We, living in a day of coped and mitred prelates, may smile at all this, but it seems incredible that such unfeeling and, one is tempted to add, irreverent conduct should have been indulged in by a Bishop upon an occasion which was to see him set apart for the service of the Most High, a structure reared at the sole cost of a munificent individual, and served by a priest (Rev. G. Lyford) who, without any prospect of earthly reward, and after devoting the best years of his life to the poor of the surrounding district, survived its completion but two years.

To say whether or not the furore for an extreme ritualism has very much outrun discretion, does not come within the scope of these papers, but if in a church like St. Michael's, a multiplicity of altars is really a necessity, some care and ecclesiological knowledge might be expended upon their apparelling and furniture, as to persons of irreverent minds such *instrumenta* are too prone to become a subject for ridicule. Allusion is here made to a painted wooden altar set up at the east end of ths north aisle having six candlesticks of the First Empire school upon it. Indeed, one cannot help thinking that the ultra-ritualistic clergy of the Church of England in the present day are doing much by the intrusion of these injudicious appendages to ruin the effect of such noble churches at present under review, as were built forty years ago by what was then the "extreme" section of churchmen, but with whom their successors, in matters of taste appear to have little in common.

(To be continued.)

NOTES ON CURRENT EVENTS.

THE scheme of the Architectural Association for the establishment of day classes in connection with their School of Architecture is now complete, and the entry of students is invited. We have already expressed our appreciation of this new movement in architectural education, and we believe that under the scheme proposed students will have greater opportunities opened out to them than heretofore. The names of those who constitute the advisory council are sufficient guarantee that the project has been well considered, and will be thoroughly and ably carried out. These names are perhaps worth giving, as showing the wide sympathies and representative character of the council. They are:—Professor Geo. Aitchison, R.A., Dr. Rowland Anderson R.S.A., F. T. Baggallay, John Belcher, A.R.A., Hippolyte J. Blanc, R.S.A., J. M. Brydon, J. J. Burnet, A.R.S.A., W. D. Caröe, T. E. Collcutt, Hy. L. Florence, Ernest George, Hy. T. Hare, T. G. Jackson, R.A., E. W. Mountford, Leonard Stokes, C. F. A. Voysey, and Aston Webb, A.R.A. Mr. W. Howard Seth-Smith, as President of the Association, and Messrs. G. B. Carvill and R. S. Balfour, as secretaries, are, of course, *ex-officio* members of the council. We have before referred to the curriculum to be carried out, and the other details of the scheme. It only remains for us to wish it may prove a complete and thorough success.

THE results of the widening of Fleet-street can be better understood and appreciated now that the bottom portion, as far as the *Daily Chronicle* office, is completed. The gain to the traffic will be great, and it is astonishing how it has improved one's view of the dome of St. Paul's, with the spire of St. Martin's, Ludgate Hill, and the left-hand tower of St. Paul's in the foreground. On the other hand, one can but regret that the peeps one has had of Wren's church at the bottom of Fleet Street and of the Temple Church are so soon to be blocked up again by the intervening new buildings. This seems to be an inevitable necessity of the case. But the most grievous piece of barbarism, because really preventible, has been the spoiling of the tower of St. Dunstan's by the extension of the Law Life Assurance offices. This is a real bit of architectural spoliation, for which there is no reasonable excuse whatever.

AT next Monday evening's meeting of the Royal Institute of British Architects a paper on "The Sources and Growth of Architecture in Egypt" will be read by Professor W. M. Flinders Petrie, D.C.L. The paper will be illustrated by lantern slides.

A PAPER on "Building Contracts" will be read by Mr. H. H. Richardson before the Society of Architects on Thursday next, the 23rd inst.

A CORRESPONDENT (Mr. Henry H. B. Lang), sends us a letter respecting the Queen Victoria Memorial, in which he urges the desirability of making the competition an open one. This is a somewhat belated protest, and no new argument is advanced by Mr. Lang in support of the protests already made in this and other journals.

THE Liverpool Queen Victoria Memorial Committee have decided that the local memorial of the late Sovereign should consist of a monument containing a statue, to be placed on the vacant piece of ground at the top of Lord Street formerly occupied by St. James's Church, which is to be preserved as an open space and tastefully laid out by the City Council. Subscriptions amounting to between £3,000 and £4,000 were announced at the meeting.

IT is announced that the residents of Boston, U.S.A., and suburbs who are natives of Great Britain or the British colonies are preparing to erect a building in Boston as a memorial to Queen Victoria. The building, which is to cost between 150,000 dollars and 250,000 dollars, will be used as a meeting place for societies of British affiliation. Canada's memorial to the late Queen will take the form of a Victoria National Museum in Ottawa, to cost 1,000,000 dollars.

IT has ben suggested that the best site for the erection of the new statue of the late Mr. Bright would be beneath the window at the St. Margaret's entrance to the Palace of Westminster, and immediately facing the Great Hall. The advantage of this site is that it is accessible to the general public, which Westminster Hall is not. And this suggested position is on the stairs leading to the committee-rooms immediately above the statue of the late Sir Charles Barry, the architect of the House of Commons.

THE Pastel Society open their summer exhibition on June 15th at the galleries of the Royal Institute, Piccadilly. It will this year be strengthened by contributions from many distinguished foreign artists, such as MM. Carrière, Raffaelli, and, perhaps, Rodin, of Paris, Delvin, of Brussels, and Previati, of Milan. Several works of the late Signor Segantini will also be shown.

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MR. B. T. BATSFORD regrets to announce that the second issue of Mr. Edwin O. Sach's monumental work, "Modern Opera Houses and Theatres," promised for the opening of the opera season, has been unavoidably delayed by the illness of the author. It is now scarcely probable that Mr. Sach's work can be re-issued before the autumn.

"THE VISITORS' GUIDE TO GLASGOW AND THE EXHIBITION" is the title of a very handy little publication, designed to give an accurate key to the Glasgow Exhibition buildings. It is published by Mr. John McMurtrie, 11, Bothwell Street, Glasgow, which can be had of all newsagents and at railway bookstalls for the small sum of threepence. To 112 pages profusely illustrated, the value of the "Guide" is considerably enhanced by the fact that it also contains two comprehensive maps—one showing a plan of the leading routes to the exhibition, and the other a ground plan of the exhibition itself.

A WELL-KNOWN Scottish antiquary and archæologist has just died at Ravenscroft, Stirling, in the person of Miss C. Maclagan, at the advanced age of 90. Miss Maclagan had published several works dealing with Scottish archæology, and about twenty years ago she prepared an important series of rubbings from sculptured monuments in the western isles, some of which were shown at the Glasgow Exhibition in 1888, and to the present Exhibition she contributed some other rubbings, produced in a way known only to herself, which has a most artistic effect in comparison with rubbings done in the ordinary manner.

THE old Red Hall at Bourne, Lincolnshire, where the gunpowder plot was hatched, is threatened. The hall (the *Daily Chronicle* states) is the property of the Great Northern Railway Company, and is now used as the railway station master's house. But the company are intending to pull it down unless some arrangement can be made to prevent its destruction. The British Archæological Society are interesting themselves in the matter, and have approached the Kesteven County Council on the subject, but without result. Some time ago the company proposed to demolish the old Red Hall, but refrained from doing so on a petition from the inhabitants of Bourne.

PROFESSOR CHAS. WALDSTEIN at the last meeting of the Hellenic Society read a paper on "A Discovery of Marbles related to the Pediments of the Parthenon." The marbles in question were at Dresden, and were three statuettes, with two only, however, of which he proposed to deal, as the other was so imperfect. They were procured in 1892, and came either from Rome or through Rome. No special value was in the first instance attached to them. The statuettes, one of which was male, were considerably corroded, but there was no mistaking the splendour of outline. The female figure was even better than the male, which represented, he had little doubt, the Kephisos, the River God of the Parthenon. The lecturer illustrated his views by a succession of pictures on the screen, and showed the connection and resemblances between this statuette with the Ilissus of the Parthenon. He traced also the conception of the River God and its successive developments from the days of Polygnotus to Roman times. Exact agreement, Peofessor Waldstein pointed out, was not found either in the quality of work or in the materials of different parts of the Parthenon; nor was evidence of geologists and petrologists by any means conclusive, for he had known a petrologist to ascribe to different sources two specimens known to have come from the same place. Variations, therefore, of this character in these specimens from other work on the Parthenon were by no means conclusive against the opinion which he had formed, and the male figure seemed clearly borrowed from the Theseus of the Parthenon. The greatest dimensions of these statuettes were 35 centimetres and 20 centimetres.

THE 86th anniversary dinner of the Artists' General Benevolent Institution was held on Saturday evening last, under the presidency of the Earl of Aberdeen. The report of the president (Sir Edward J. Poynter) and council, which was circulated among the guests, stated that the gross receipts in 1900 amounted to £4,163, and £3,649 was distributed among 205 applicants in sums varying from £10 to £60. The chairman, in proposing "Continued Prosperity to the Institution," said that it seemed to combine in a remarkable degree all those characteristics which one would wish to find in a society designed to help those who needed assistance. Moreover, the working expenses, under 10 per cent., were singularly small in couparison with the grants made. The society was mainly dependent for support on the artist community, but he thought that it had no mean claims on the generosity of the general public. Mr. Alfred Waterhouse, R.A., treasurer, then announced contributions amounting in all to £3,025. The chairman next submitted the toast of "The Royal Academy, the Royal Society of Painters in Water Colours, the Royal Society of British Artists, the Royal Society of Painter Etchers, and Other Societies connected with the Fine Arts." Mr. Crofts, in responding, mentioned that the number of paintings sent to the Royal Academy this year for exhibition was 400 more than in the previous year. Mr. E. A. Waterlow, A.R.A., also responded to the toast.

THE collection of engravings after Sir J. Reynolds of the late Earl of Normanton came up for sale at Christie's on Tuesday, when some very high prices were realised (the total of 122 lots amounting to £5,506). The highest were:—Viscountess Crosbie, by W. Dickenson, first state, 580 gs.; Lady Jane Halliday, by V. Green, first state, 450 gs.; Lady Bampfylde, by T. Watson, fine proof, 460 gs.; Anne, Viscountess Townshend, by V. Green, first state, 450 gs.; Mrs. Siddons as the Tragic Muse, by F. Haward, first state, 440 gs.; Lady Caroline Howard, by V. Green, first state, 440 gs.; Lady Harriet Herbert, by the same, first state, 430 gs.; Miss Meyer as Hebe, by Jacobé, first state, 380 gs.

THE double discovery of two masterpieces by Titian and Velasquez is announced by the *Globe*. These pictures were found by a young and talented Venetian artist, Signor Italico Brass, at Gorizia, on the Isonzo, near Trieste, his native place, and formed part of a private collection. He had known of them for long, but, enlightened by his study of the great masters in Venice, he became more and more convinced of their superlative value, and that he had made an unique discovery. The owner wanted money badley, but would only sell the whole collection, so Signor Brass, with the courage of his opinion, sold his patrimony and bought the lot. On his return to Venice he confided his discovery to Professor Cantalamessa, the distinguished President of the Accademia di Belle Arti. Naturally he was incredulous; he thought Signor Brass was dreaming, but on seeing photographs of the pictures his unbelief was so shaken that he went off to Gorizia to judge for himself, when he was simply enraptured, and after careful study, determined not to be led away by his feeling of enthusiasm, he pronounced them to be not only genuine, but to be most superb examples of both Titian and Velasquez at their best.

THE Executive of the British Fire Prevention Committee announce that the opening of their new testing station at Westbourne Lodge, Bayswater, which had to be postponed on account of the illness of their chairman, Mr. Edwin O. Sachs, will now take place on Wednesday afternoon, the 22nd inst., when testing operations will be resumed, and the issue of the committee's reports, which have already reached an aggregate of 60, will again be regularly proceeded with.

AT an examination in practical sanitary science, held in London, under the auspices of the Sanitary Institution, on April 26 and 27 last, 12 candidates presented themselves, out of which number five were awarded certificates. An examination for inspectors of nuisances was held on the same date, when 113 candidates presented themselves, out of which number 55 were certified, as regards their sanitary knowledge, competent to discharge the duties of inspectors of nuisances under the Public Health Act, 1875.

AT the last monthly meeting of the Metropolitan Public Gardens Association it was stated that the London County Council had agreed to petition against the Christ's Hospital Bill, partly with a view of safeguarding the pro-

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visions of the Disused Burial Grounds and Open Spaces Acts, from the operation of which public statutes the promoters sought by the introduction of this private Bill to exempt their property. A letter was read from the Hackney Town Council, stating that as desired by the association they had restored the St. Thomas's Square disused burial ground for use as a public garden, which the late vestry had converted into a yard for materials and rubbish. Among a number of sites under consideration were the Grange, Kilburn, vacant land in Belvedere Road, Norwood, St. John's Churchyard, Kensal Rise, and some fields near Wandsworth Bridge Road, and it was decided to make efforts to secure them for public use.

THE County Purposes Committee of the Corporation have submitted to that body a report as to the Royal Commission on the Water Supply's suggestion that there should be a water board formed consisting of not more than 30 members selected on account of their business capacity and their knowledge of matters connected with the water supply. No direct representation of the Corporation of the City of London was proposed, but the Commissioners suggested that the London County Council should appoint 10 members, the Thames Conservators four, the County Councils of Middlesex, Surrey, Essex, Hertford, and Kent, the Lee Conservancy Board, and the borough of West Ham two, and that the chairman and vice-chairman of the board should be appointed by the Local Government Board. Having regard to the position of the Corporation as the local authority in connection with the water supply in the City, to the prominent part it had for many years taken in reference to the proposed purchase of the companies' property and rights, and the fact that the City Chamberlain was the treasurer of the sinking fund formed for the purchase of the water companies, the Corporation was entitled to representation on any statutory authority appointed to control and manage the water supply of London, and the committee recommended that they should be authorised to wait by deputation upon the President of the Local Government Board with a view to making clear the Corporation's position and rights in that respect. This recommendation has been adopted.

THE owner of certain business premises in the city was some little time ago summoned for failing to comply with the requirements of a certain notice in writing served upon him by the London County Council, specifying the measures necessary for providing the factory, on the storeys above the ground floor, with such means of escape in case of fire for the persons employed therein as could reasonably be required under the circumstances of the case, contrary to the provisions of section 7 subsection (2) of the Factory and Workshop Act, 1891 (54 and 55 Vict., c. 75). When the case came before the magistrate it was shown on behalf of the defendant that the staircase at the western end of the premises required by the notice could not be constructed without interfering wtih the portion of the premises on the ground floor occupied by the Paper Cutting Company as a factory and as tenants of the respondent, and that the tenants of this portion of the premises objected to the interference. The magistrate decided that the construction of a staircase on the western side in accordance with the requirements of the notice would constitute a trespass and encroachment upon the premises 90, Goswell Road, which was a separate factory, and that the notice could not in this respect be enforced. He therefore dismissed the summons. The London County Council appealed, and the appeal was heard before the Lord Chief Justice and Mr. Justice Lawrance. The appeal was dismissed, the Lord Chief Justice remarking that the magistrate thought that he could not convict, the respondent for breach of obedience to that notice, and he (the learned Judge) thought he was right. If it appeared that the order could not be carried out without an act of trespass being committed, the magistrate could not be called upon to convict merely because the owner had not taken the London County Council to arbitration.

THE carpenters, joiners, and bricklayers on strike at Yarmouth for an increase of pay have failed to secure a conference with the employers. They are now dealing direct with the public, and taking contracts for all building work.

OUR ILLUSTRATIONS.

ROYAL VICTORIA HOSPITAL, BELFAST.

HENMAN AND COOPER, ARCHITECTS.

THE erection of this new building, designed by Messrs. Henman & Cooper, 19, Temple Street, Birmingham, is now well advanced. It affords a striking example of a new departure in hospital design, in which Mr. Henman's own belief, the outcome of a long practical experience and consideration of the problem, is supported by some of the cleverest expert medical opinion of the day. The result of this essay in a new development of hospital planning will be watched with much interest amongst architects and the medical faculty. The drawings we illustrate, form a prominent exhibit in the architectural gallery of this years' Royal Academy exhibition.

With the exception of the Administrative Department the buildings are all only one storey in height, and are disposed on a site covering some six acres in extent. Accommodation is provided ior 300 patients, eight resident medical and surgical offices, 76 nurses, and 32 male and female attendants and servants.

The administrative buildings of four storeys and basement, in three separate buildings on the north side, provide a spacious entrance hall (above the porch of which is a statue of Queen Victoria), also accommodation for the resident staff, the nurses' home, the attendants' and servants' quarters, the dispensary, and the kitchen department. On the south side of a main corridor, running east and west, are the wards, side by side without intervening space, and practically under one roof. Each ward is for 14 beds, eight being for medical, eight for surgical, and one for gynæological cases, with their accessory rooms, approached by branch corridors. The wards are alternately arranged for male and female patients, each honorary physician and surgeon having control of two wards, one for each sex.

In connection with each group of four medical wards there are a large class-room and two clinical rooms, and to every pair of surgical wards there is an operating room On the north side of the main corridor are the ophthalmic wards, two of six beds and two of two beds; also an operating room. Near to each of the 17 large wards is a separation ward for two beds; a ward kitchen serves for each pair of wards, except for the gynœcological cases, where the department is self-contained, with separate operating room. Bath rooms and conveniences are attached to all the principal wards, and linen cupboards, and stores for patients' clothing are provided. Two detached buildings are for isolation purposes, one being for six, the other for four beds, with kitchens, conveniences, and nurses' bedrooms. To each of the 14 bed wards there is a large window at the south end, opening on to a balcony, and from which there is a view over park-like grounds to the hills beyond, and from end to end of the wards there are lantern lights, glazed on the slightly sloping sides; consequently, as the only lofty buildings are on the north, whatever sunlight there may be throughout the day is admitted to the wards, or may be regulated to requirements by the provision of green draw-down blinds.

This compactness of the arrangement of wards simplifies administration, and reduces labour to a minimum, and also lends itself to the adoption of the "Plenum" system of ventilation more readily and with more certain results than with wards one above another in buildings of several storeys.

To the west of the administrative buildings is the out-patients' department, consisting of a large waiting hall with a number of medical and surgical consulting rooms around on the ground floor level, and in the basement there are retiring rooms for the use of students attending the hospital.

The appliances for securing ventilation are in a separate building at the east end of the main corridor, connected with the hospital at the basement level by the principal air inlet duct, which is 20 ft. high by 9 ft. wide at that end. The air intake building contains what may be regarded as the lungs of the hospital, because by means of the appliances there installed the whole of the fresh air supply is drawn in, filtered through moistened screens, warmed in cold weather, and forced on by means of power-

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ful air-propellers in quantity sufficient to change the whole capacity of the hospital seven times per hour in winter and ten times per hour in summer without opening any windows. The appliances are all in duplicate, each of sufficient capacity or power to supply the minimum amount of air required, so that all necessary cleaning, rest and repair of the machinery may take place without stopping the air supply.

The pathological department, including a laboratory, post-mortem room, mortuary, and a viewing room, divided off by a glazed screen, is provided for in another detached building.

There will be a complete steam laundry in a detached building on the premises, together with disinfecting apparatus and a destructor.

The buildings are being built of stone in combination with specially manufactured sand-faced bricks of good red colour. The cost, we understand, will not exceed £300 per bed.

The contractors are Messrs. M'Laughlin & Harvey, builders, of Belfast and Dublin, and Mr. G. S. Flower is acting as clerk of the works. Mr. W. H. Stephens, of 13, Donegall Square North, Belfast, is the quantity surveyor.

SCULPTURE AT THE NEW "BULL AND MOUTH HOTEL," LEEDS.

T. W. CUTLER, F.R.I.B.A., ARCHITECT.

These admirable sculptured figures of "Summer" and "Autumn," which we illustrate to-day, form the corbels for the support of the pilasters in the Briggate facade of the new "Bull and Mouth Hotel" at Leeds. They are prominent features in the present Royal Academy Exhibition. The "Bull and Mouth Hotel" was an old fashioned hostelry, which has occupied its present position for over 200 years. The figures were modelled by the well-known sculptor, Mr. F. E. E. Schenck, from sketches of the architect, Mr. Thomas W. Cutler.

LIVERPOOL ARCHITECTURAL SOCIETY.

THE annual meeting of the above Society took place on the 13th inst., under the presidency of Professor F. M. Simpson.

The report, which was adopted, enumerated 146 members, namely, 55 fellows, 53 associates, 20 students, and 18 honorary members, an increase of 12. The library was being more highly appreciated. The accounts showed an increased credit balance. Mr. W. E. Willink remarked that the combination of an increased activity and an augmented balance in the bank was very satisfactory.

The election of officers for the ensuing year then took place, resulting as follows:—President, Professor F. M. Simpson; vice-presidents, P. C. Thicknesse and T. E. Eccles, A.R.I.B.A.; honorary secretaries, Hastwell Grayson, B.A., A.R.I.B.A., and G. W. Fraser, A.R.I.B.A.; honorary treasurer, James Dod; honorary librarian, E. G. Dickinson; council—fellows: C. E. Deacon, F.R.I.B.A., T. E. Eccles, A.R.I.B.A., H. Hartley, F.R.I.B.A., E. A. Ould, F.R.I.B.A., James Strong, P. C. Thicknesse, W. E. Willink, M.A., F.R.I.B.A.; and associates: E. P. Hinde, A.R.I.B.A., and Arnold Thornely, A.R.I.B.A.

In closing the session the President expressed thanks for his re-election, and referred to the pleasure he had found in a visit to the East, where he collected a number of architectural photographs, which he had placed on exhibition. He thought it might be advisable at the opening of the new session to bring drawings or photographs of any interesting buildings, new or old, noted by members during their holidays. He hoped more papers would be contributed by members, the tendency of the society having lately been to rely too much on outside aid. The best way to spend a holiday was to prepare a paper for the next session. The man who prepared one paper learned more than he who heard fifty. Rejoicing in the spread of architectural education, in which Liverpool had led the way, he said there was no doubt that as the new universities increased in number, architecture and similar subjects would be admitted to the regular degree course. Dealing with Liverpool's recent architecture, he alluded with pleasure to the breadth of scale and simplicity of treatment shown in the White Star offices, Parr's Bank, and the Royal Insurance offices, and said Liverpool had three open spaces at its disposal. The ground at the west of St. George's Hall was, he believed, to be architecturally treated. The space formerly occupied by St. George's Church awaited its fate. The most important space was that of the late George's Dock, which might be converted into one of the finest squares in Europe, containing some of the finest buildings, and form an impressive entrance to the city from the Mersey. He hoped Liverpool would avail itself of this great opportunity.

EXETER DIOCESAN ARCHITECTURAL SOCIETY.

THE annual meeting of Exeter Diocesan Architectural and Archæological Society, was held last week at Kenton, it was stated that there had been no public building of importance finished in Exeter or Devon that the committee were aware of during the past twelve months. The aim of the society was to prevent old buildings being altered and over restored. The church at Exbourne had had its nave restored, and the next portion of the work to be taken in hand was the nave seating. The old screen had been restored. Black Torrington Church restoration would soon be commenced. Sampford Courtenay Church had been reopened after a most successful restoration, and Inwardleigh Church had also been restored. There is a balance in hand of £32 6s. 11d.

The election of officers for the ensuing year resulted as follows:—Patron, Bishop of Exeter; president, Hon. Mark Rolle; vice-presidents, Dean of Exeter, Chancellor Edmonds, Bishop of Crediton, and Mr. J. Brooking Rowe; hon. secretaries, Rev. R. Medley Fulford and Mr. J. Jerman; hon. treasurer, Mr. J. T. Browne-Mason; curator, Mr. C. J. Tait; committee, Revs. W. P. S. Bingham, F. B. Dickinson, Roger Granville, W. Hope, O. J. Reichel, and E. V. Freeman, Dr. Brushfield, Messrs. E. H. Harbottle, J. Newnham, Harbottle Reed, T. Kennett-Ware, and A. J. Mackey.

Afterwards Mr. J. Newnham, A.R.I.B.A., read a paper on "Vestries," and notes were contributed on the excursions which took place last year by Rev. R. Medley Fulford. An inspection was afterwards made of the parish church, where the vicar read notes chiefly concerning the screen.

THE RESTORATION OF ROTHESAY CASTLE.

THE restoration work carried on at Rothesay Castle by the late Marquis of Bute is now completed so far as it is intended to go meantime, and all the building material collected in the castle yard has been cleared away, so that visitors may have access to the interior. The restoration is confined to what is known as the palace portion of the building, and the chief feature is the banqueting hall, an apartment measuring 50 feet in length by about 22 feet in breadth and 15 feet in height. The ceiling is composed of massive oak beams carried across the entire breadth, the ends resting on stone corbels. The joisting is carried along lengthwise over these beams, and the ceiling has an appearance suggestive of strength, while very pleasing to the eye. The side walls are left in their rough state, and the old asphalt flooring remains. Temporary windows have been put in, however, glazed with panes about nine inches square, which gives the place quite a habitable appearance from the outside. Two winding stairways on the south side of the building lead up to the banqueting hall from the main basement corridor. The hall is also entered from the rear by two doorways, one at either side of the landing. The restored portion, which will be closed to visitors except under special circumstances, is covered in by a temporary lean-to roof, and in the space betwixt this and the ceiling of the banqueting hall is stored the finished woodwork prepared for the intended roof before the death of the late Marquis. The work has been designed by Mr. J. R. Thomson, architect, and carried out under the superintendence of Mr. Daniel Macfarlane, clerk of works, Mountstuart. It is hoped that after the present Marquis attains his majority the restoration, as intended by his late father, will be carried out in its entirety.

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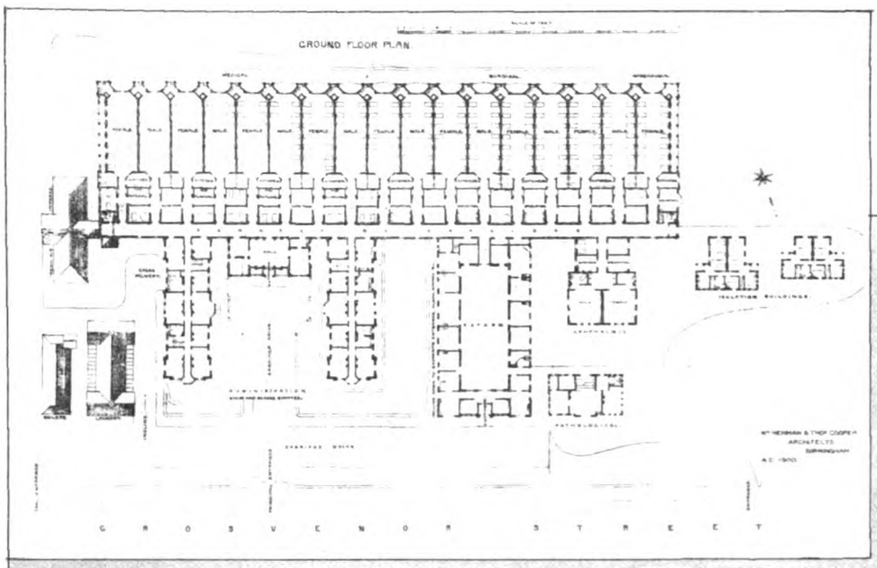

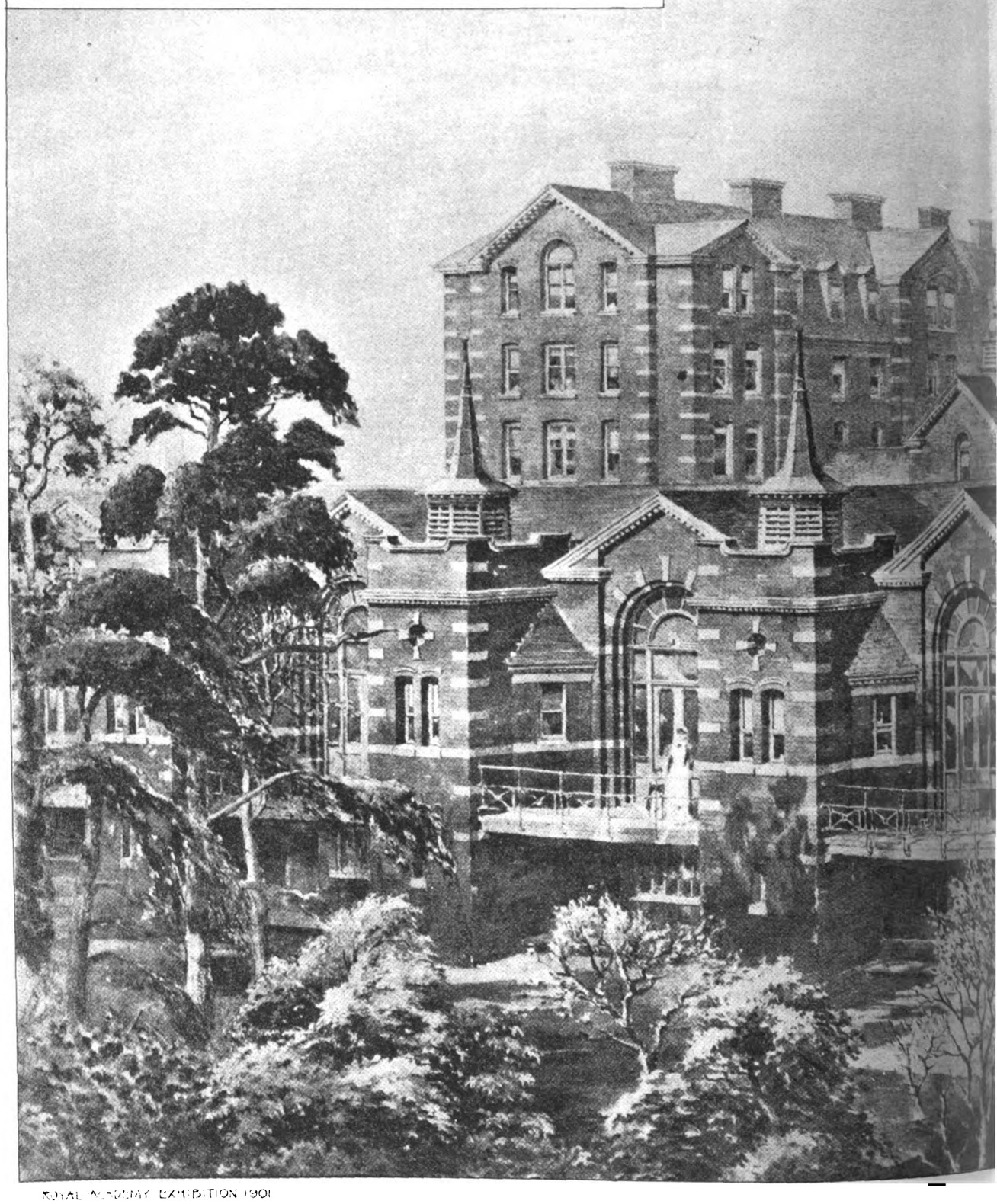

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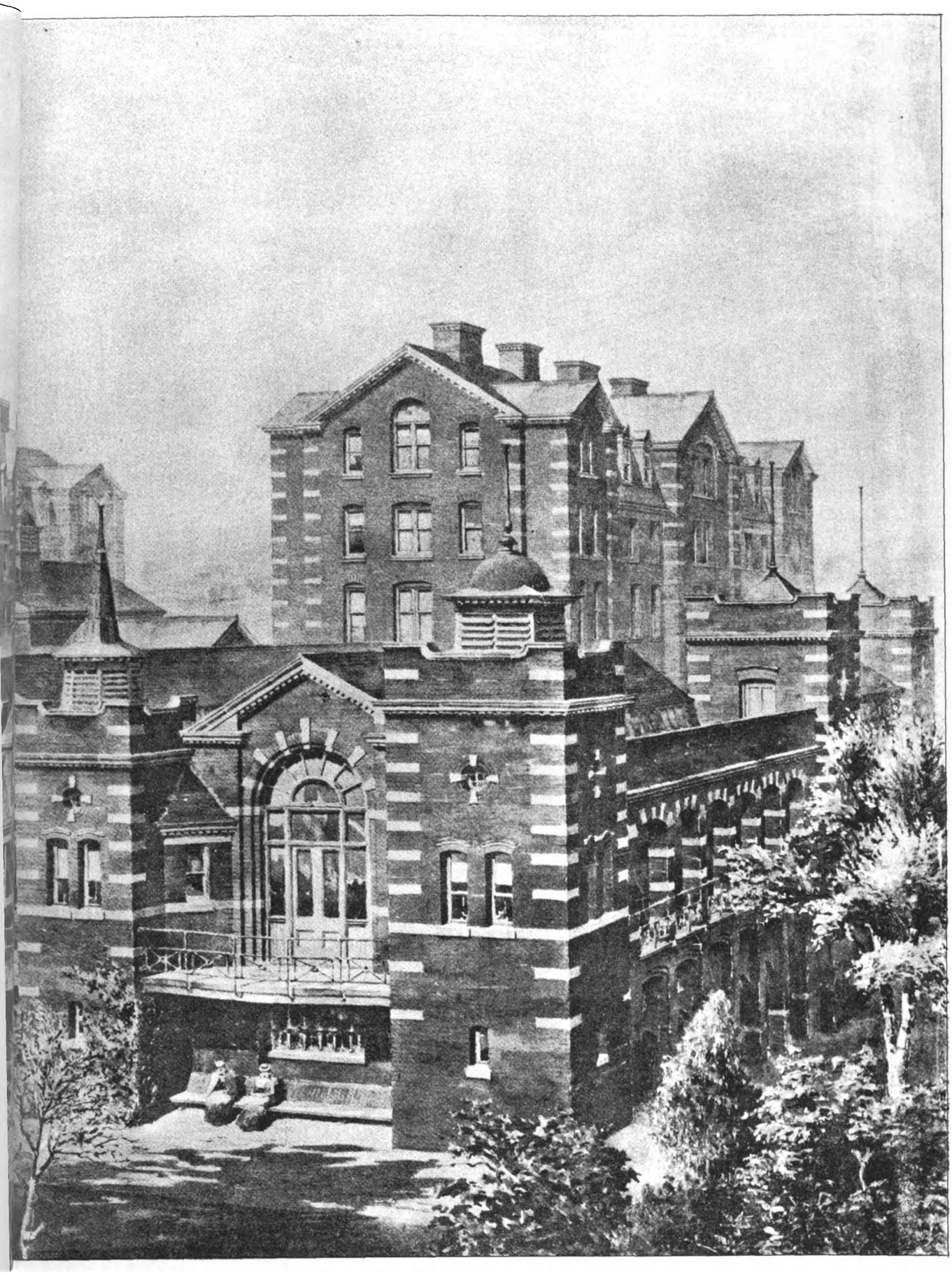

HOSPITAL BELFAST.

ER. ARCHITECTS. BIRMINGHAM.

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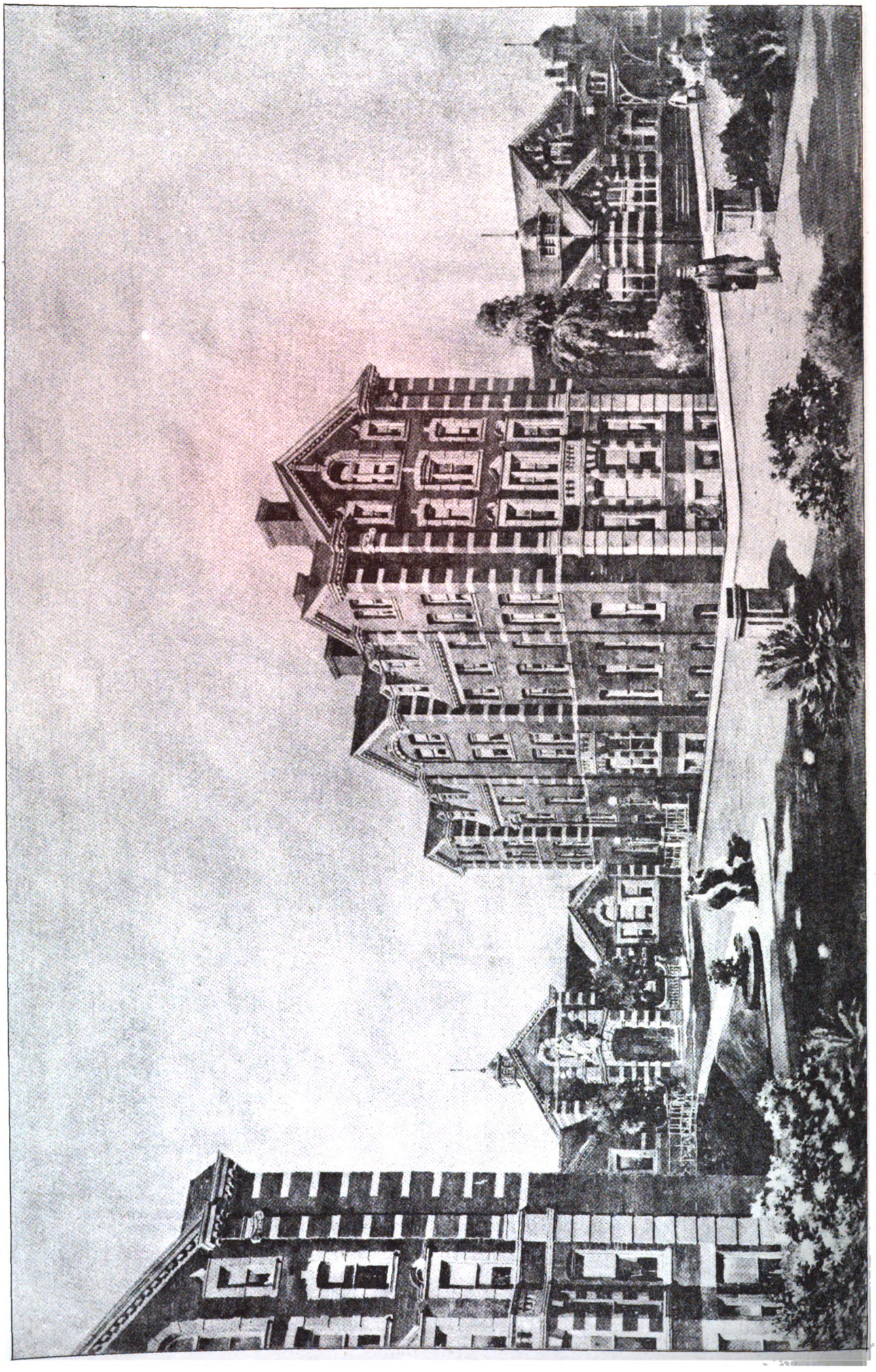

ROYAL VICTORIA HOSPITAL BELFAST

W.H. HEANEN F.R.I.B.A.

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SUMMER

AUTUMN

ROYAL ACADEMY EXHIBITION 1901

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PROTECTION OF BUILDINGS FROM LIGHTNING.*

By ALFRED HANDS, F.R.MET.SOC.

I DO not attach very great importance to the kind of metal to be used for a lightning conductor. The conductor may be of copper or iron, or it might even be of lead, so long as it is of sufficient capacity not to be melted by the heating effect of a severe discharge, it will answer if properly applied. It must not be supposed from this that I advocate the use of lead, or even iron. Iron conductors have been used almost exclusively in America since Franklin's day, and also in some Continental countries, with as good results as in England where copper is almost exclusively used. It is very probable that the older ideas as to the relative conductivities of copper and iron do not apply in the case of sudden discharges, although I do not think that Dr. Lodge has proved his case; but if iron, instead of being "not a whit worse than copper," was seven times as good, it would not prevent the dividing of the discharge between it and other paths afforded, or even sparking to insulated metals, if it was not scientifically applied; and on the score of durability and cheapness, I have no hesitation in saying that the older type, or copper tape conductor, cannot be beaten. On the score of appearance, too, copper tape has the advantage, and appearance has to be considered, for I do not think there are many architects who would consent to have their work turned into what would look like enormous birdcages.

As Dr. Lodge has himself said, it is impossible to make the lightning conductor such a superlatively easy path that the discharge will take that one only if other paths are open for it, but it is here that the skill and scientific knowledge of the expert has to be shown. If one had to protect a structure composed only of brick, stone, or wood, and with not a particle of metal in its construction, nothing would be easier. All that would be necessary would be to have a conductor of metal, pointed at the top and leading down into the earth. It might be made in lengths scarcely touching one another, and the earth connexion might be absolutely bad, and yet the building would be protected. All that would happen would be heating and possible fusion at the joints, and the ground at the foot of the conductor might be blown up. It is very rarely, however, that one is called upon to protect a structure of that kind. Modern buildings are often a mass of what I may call unintentional lightning conductors, for all the metals used in the construction of buildings are conductors of electricity, and therefore conductors of lightning. Some of these metals have good earth connexions—in fact, gas and water supply-pipes have excellent "earths," owing to the extent of their ramifications underground; and it is a matter of considerable difficulty—in fact, in some cases practically impossible—to make the "earth" of the intended conductor as good as these accidental ones unless we actually connect the conductor to the underground mains. This is the common-sense view of the matter. It is no use for a manufacturer to tell you that with his patent coupling, or serrated earth, plate or what not, he can guarantee that sparks will not pass off to accidental conductors placed dangerously near it. If he says that, he either does not know what he is talking about or he is guilty of a deliberate falsehood in order to sell his wares. There is nothing magical about a lightning conductor; it is merely the adaptation of the known laws of nature to the use of mankind. If you fixed one conductor to the highest part of a building, and another one, say 6 ft. up the wall, and approaching within a foot or two of it at that point, and both with equally good earth connections, I do not suppose you would be surprised if the lightning divided and part went down one conductor and part down the other, or, if brickwork intervening, a hole was made through it. Why, therefore, should you be surprised if, when arranging for your lightning conductor, you take no heed of the metal inside the building, and place one conductor down outside and another one in the form of a gas-pipe inside, and the discharge divides between the two, knocks a hole in the wall, and sets light to the gas? Lightning has to follow certain unalterable laws, and one of those laws is that if two or more paths are provided, it must divide between them. It is no use labelling or calling one the lightning route; that will not alter the law. Out of the many cases of true failure of lightning conductors that I have examined I have found that 90 per cent. have been due to neglect of this common-sense view, as I call it. It is no argument against the use of conductors that the discharge will divide between accidental and intended paths. It merely shows the necessity for arranging the conductor so that the faults which lead to the division of the discharge shall not exist. If such faults do exist, it is obvious that the damage should be very much less, and never in any case greater, than if the conductor had not been applied at all. But this is poor philosophy. We should arrange so that the division shall not take place. We cannot prevent a building being attacked by lightning—any structure, from a cathedral to a hencoop, may be struck. All we can do in this respect is to provide our conductor with points (and the more the better) to lessen the liability of its being struck. We can, however, go further than this. We can, by carefully studying our building both inside and out, arrange our conductor system so that the lightning shall go harmlessly past it through our conductor and leave our building and its contents secure. That is unless somebody who does not understand the matter comes along and alters the conditions that we studied, and so makes our system less effective. Before going further into the matter I must draw a distinction, as Snow Harris did, between side flash to other paths and sparking to metals which do not afford an alternative path, though not agreeing with him as to the impossibility of the latter. In order to make the matter more clear I must dip a little into theory, though I do not think it necessary to go very far.

There is nothing mysterious in lightning sparking through to a gas or water pipe or other metals the other side of a wall. It is not chance, or instinct, or any other quality not explainable by scientific laws. We must reason the matter out by the use of the faculty of imagination, for I know of no simile which would serve to bring the matter to your minds. As Professor Tyndall once said of another scientific matter:—"The question leads us beyond the region of sense and into that of imagination. This faculty, indeed, is the divining rod of the man science. Not, however, an imagination which catches its creations from the air, but one informed and inspired by facts, capable of seizing firmly on a physical image as a principle, of discerning its consequences, and of devising means whereby these forecasts of thought may be brought to an experimental test. If such a principle be adequate to account for all the phenomena, if from an assumed cause the observed facts necessarily follow, we call the assumption a theory, and, once possessing it, we can not only revive at pleasure facts already known, but we can predict others which we have never seen. Thus, then, in the prosecution of physical science, our powers of observation, memory, imagination, and inference are all drawn upon. We observe facts and store them up; imagination broods upon these memories, and by the aid of reason tries to discern their interdependence. The theoretic principle flashes or slowly dawns upon the mind, and then the deductive faculty interposes to carry out the principle to its logical consequence. A perfect theory gives dominion over natural facts; and an assumption which can only partially stand the test of a comparison with facts, may be of eminent use in enabling us to connect and classify groups of phenomena." So in the present case we must exercise the faculty of imagination in order to understand what takes place, and if we are omitting certain conditions or considerations which afford a fuller explanation, still, if it enables us to grasp a general idea, and assists us to understand the matter, we shall be in a better position.

When the conditions are proceeding which lead to a discharge of lightning occurring, induction, as I have already pointed out, takes place, that is to say, there is an enormous difference of potential between the cloud and the building about to be struck; this inductive action is stronger in conducting than in non-conducting masses, therefore the lightning conductor and other metals would show this action better than brickwork. If the metal is connected to earth the action would be quick, if the metal is insulated the action would be slower, because the charge would have to filter through the insulating material gradually. Suppose that we have a lightning conductor, and near it, say, a metal safe. Let

*From a paper read before the Architectural Association, on the 10th inst,

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us suppose, for the sake of argument, that the value of this induced change was 1 (if the cloud was positive the induced state would more properly be described as a minus quantity, but it will be more simple if we regard it merely as 1) both in the lightning conductor and the safe. Then comes the discharge, the conductor has its potential raised suddenly at the moment of receiving the flash to, say, 1,000, but the safe, which is insulated remains practically at 1. There is then a big difference of potential between the conductor and the safe, one being 1,000 and the other 1, therefore there is a strain, and if the safe is near enough a spark passes knocking a hole through the wall so as to bring the potentials nearer in value. Let us say that the safe is raised to 800. In the meantime the discharge has died out in the conductor, and this returns to 1; but the safe is 800, so that there is still a difference of potential, but the values reversed, and a spark passes back. So backward and forward should the spark pass—possibly half-a-dozen or a dozen times in a minute fraction of a second, a fraction so minute that we could not detect the alternations, and we should perceive only one spark, until the two objects arrive at about the same potential, when the tension dies out. This would be an oscillatory spark. If we connected the safe and the conductor together by a piece of metal, these oscillations would take place through the metallic connection, and there would be no visible effect, unless, say, we had another safe a few inches away from the first one, when there would be again a difference of potential and resultant sparking. Again a third safe near the second and the same thing would occur—in fact, this might be carried on from one to another to a considerable distance, providing each succeeding interval between the safes was less than that preceding it, and sparks would pass between each, but at each interval the spark would be weaker, till we should get to a distance at which no spark would pass.

Let us suppose another case—a long piece of metal, say 20 feet in length, connected at one end to the lightning-conductor, but not otherwise connected to earth. At the moment of the occurrence of the flash the potential of the conductor would be raised, and also that of the long piece of metal; but the rise in the latter would occur at the end connected before it did at the other, therefore we should get an alternative rise and fall of potential at the ends of this piece of metal, or what Dr. Lodge calls a surging effect, but this would be harmless unless another piece of metal at a different potential came near it. If it did, there would be sparking. Even if the long piece of metal was not actually connected with the lightning-conductor, but just so far away that a spark would not pass to it, there would still be the same surging effect caused by induction, and if other metal approached close to the other end there would be difference of potential and consequent sparking. These are instances of local sparking only, and do not indicate that any part of what we may call the lightning has left the conductor to go to earth by another route. This sparking is not as a rule a very serious matter. A small hole may be made through brickwork or other intervening non-conducting matter, but that is about all, unless some inflammable material intervened, when a fire might be caused.

Now we come to the question of division of a discharge between a lightning-conductor and other paths to earth, which form what I call accidental conductors. Given a lightning-conductor outside and a gas or water-supply pipe near to it inside the building, and this is a very different matter. The action as regards difference of potential and consequent strain and resulting spark is somewhat similar; but the sparking distance is very much longer, and the spark more powerful, because it is actually a portion of the lightning discharge passing. If we knew the respective inductive resistances of the intended and accidental conductors, we could gauge approximately what proportion of the discharge would go to earth by the former and how much by the latter. But even if you got nineteen-twentieths of the discharge through the former and one-twentieth through the latter, it might be a serious matter. I may here refer again to Dr. Lodge's suggestion that metals should be connected to earth and not to the conductor. Let us take again the question of the safe near the conductor. If it was neither connected with the earth nor the conductor we should only get local sparking, as I call it, but suppose we connected the safe to earth and not to the conductor, we should get an alternative path to earth provided by which actual division of the discharge would occur, and this would be a far more serious matter. Besides this, the sparking distance would be increased enormously, so that objects which would otherwise have been at a perfectly safe distance would be in dangerous proximity. On the other hand, the indiscriminate connexion of metals would be almost as fatal.

Now as to the methods for rendering our system of protection perfect. We must first of all decide on which are the parts of the building liable to be struck by lightning, and protect them either by separate conductors or by branch conductors carried to one or more mains to earth as may be necessary, and we must see that these conductors afford as little resistance as possible. The joints must be soldered so that they will not only be perfect at the time they are put up, but will remain perfect. The earth connexion must also be made so that this path is at least as good a one as other paths about the building; and besides this we must carefully study our building, both inside and out. We must take into consideration all the metals used in its construction, both as regards their relation to the conductor system and to one another, and take such precautions that neither division of the discharge shall occur unless we intend it to occur, nor sparking in places where sparking would do harm. It is here that the skill and experience of the expert have to be displayed, and I cannot give you any rules for your guidance on this matter, for buildings differ so much in their construction and arrangement that rules applicable to one case would be absolutely useless for another. Nothing is of use but knowledge and experience, and as I have already indicated, these cannot be imparted or acquired in a short space of time. I can only say that in some cases connexions are made, and in others the dangerous metals are avoided, but that great discrimination is required as to what metals are connected and what avoided. Sometimes dividing the discharge between several paths or over a wide extent is the best plan, and sometimes other plans are adopted according to the exigencies of the case or the particular combination of dangers which one may find to exist.

So far I have only touched on what I may call the fringe of this subject. Time will not allow of going much further, though there are many questions, such as the making of earth connexions, which are often misunderstood, and in which the methods of procedure sometimes adopted differ widely from the scientific and common-sense methods. I may, however, in conclusion, discuss a matter which is of great importance to architects, and that is as to what parts of a building are liable to be struck, and which therefore require protection. When we have an important public building to protect, and cost is of no importance, we may be tempted to run conductors in all directions and protect all parts whether likely to be struck or not. It is not often that over-protection will do any harm, though it may do so if the matter is not properly done. In the majority of cases cost is, very properly, a serious consideration, and we do not want to add a penny more to the outlay than is necessary to secure efficiency. It is therefore important to know just what are the places liable to be struck. I have devoted many years to this question, and have examined many thousands of buildings which have been struck, first with the object of formulating a theory, and afterwards to prove that theory, and I propose putting this before you as briefly as possible. The main principles are simple, and possibly it is the very simplicity of the matter which has led to its being overlooked. The popular idea is that it is the highest point of a building which is struck, but probably some of you may have met with cases in which others very much lower have been damaged. I have come across hundreds such. The explanation is that the nearest part of the building to what I may call the point in the cloud from which the discharge originates gets struck, and the highest is not necessarily the nearest. A discharge occurs between two planes or points one of which is in the clouds and the other is in the ground; the building is merely an object *en route*, as one might say, which forms a path of less resistance than the surrounding air. Now, a lightning conductor does not attract lightning, except inasmuch as, being of metal, induction and consequent difference of potential takes place more strongly in it than in the surrounding non-

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conducting materials, and in this respect the thin line which is intended to protect the building from lightning is insignificant compared to the other metals used in its construction. Brickwork, although non-conducting to a certain extent, offers a lower resistance than air. Therefore, it would be contrary to science for a discharge to pass over a chimney-stack or gable-end to strike a lightning conductor merely because it is metal when probably the gable-end or chimney has a much larger extent of metal just below it. Even if the lightning conductor affords the best path to earth, the path of least resistance would be through the gable-end or chimney and the house to the conductor, rather than through a corresponding distance of air, to get to the top of the conductor. We have to consider two kinds of discharge, one the most dangerous type, which occurs fairly straight through the air in an almost vertical line, and the less dangerous flashes which occur in a somewhat oblique line, and are generally meandering in their course. These latter flashes are often called forked lightning, though this is a misnomer, and are popularly, but mistakenly, supposed to be the most dangerous. It is the straighter flashes which do the most harm; those which are capable of breaking almost straight through the air without having to go out of their course to take advantage of any little conducting matter, such as moisture, which will assist them on the way. The meandering flashes are not by any means to be ignored, it is only in comparison with the straighter ones that they are mild.

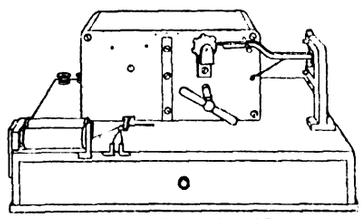
In arranging what parts of a building require protection, we have to consider the various points in the sky from which the discharge may originate, and so arrange our system that the conductor, or one of its branches, will form the nearest part, no matter from what direction the discharge may come. There is, of course, a limit to the angle of obliquity, and this limit should be about 40 deg., and my observations have led me to infer that the greater the angle of obliquity the milder the discharge. We hear reports sometimes of buildings which have been struck by lightning in absolutely unaccountable places, such as lightning missing a tall spire and striking the nave close underneath it, or even striking through a window. Like all other so-called vagaries, freaks, or perversity of lightning, such peculiarities do not exist except in the minds of people who do not understand the matter. For a dozen years past I have been scouring the country to try and discover a freak of lightning; plenty are reported in the papers, but on investigation they all prove to be ordinary enough, and merely what one could have predicted had one been informed of the circumstances beforehand. Lightning is a force of nature, and, like all other natural forces, is governed and regulated by laws more unchangeable than those of the Medes and Persians; therefore if we find cases which do not quite agree with our preconceived ideas, we must admit that we either do not know the law, or that we have overlooked some important factor of the case, and not put it down to a sudden and capricious change in the laws of Nature.

I have prepared a rough sketch showing a house with a turret and gable ends, a tree, a wall and a hen coop, placed in a line and so arranged that either may be struck according to which is the nearest object to the point overhead from which the discharge occurs. These are all objects which I have known to be struck by lightning, and I have heard great surprise expressed sometimes that the lower object should have suffered and the higher one, not so very far off, should have escaped. In arranging as to which parts to protect, therefore, we can consider this question as to which would be the nearest parts, and we can take it that these are parts which might be struck, other parts higher than these may be absolutely safe if they come well within a line drawn from one to the other, provided other circumstances are equal; but they may not be, for metals either inside or outside the building and other circumstances may complicate the question so far that this rule does not entirely apply. Here, again, the expert requires to weigh carefully the whole circumstances, and nothing but knowledge and experience will enable him to decide accurately which places may safely be ignored and which may not. Notwithstanding all the difficulties that I have pointed out, absolute protection is possible if the building is thoroughly studied. We can either protect it so that we can say not a brick or stone shall be disturbed, or we may say we will protect it so that the inmates shall be safe and the building shall not be set on fire or damaged to any extent—we may say that a stone finial at this end may be knocked down, or a few bricks or tiles disturbed there, and that we will risk that as we do not consider this damage worth providing against, but if we do this we must realise that we are running the risk, and if the stone finial is thrown down, or the bricks or tiles displaced, we must consider that we deliberately took the risk, and that it is not a failure of our system of protection. In conclusion, I can only advise you not to make the general error of providing your conductors of exceptionally large size under the mistaken idea that by providing your conducting path of exceptional capacity as it is wrongly called, you can ignore the scientific aspect of the question, for no increase in size of the conductor will compensate for this, and unless you are prepared to devote a number of years and a large sum of money to a very close study of the subject you must be prepared to abide by the opinion of an expert who has acquired the necessary knowledge, and be guided by him, confining yourselves to a close supervision of the work, and to seeing that it is being carried out in a way which will not only render the work efficient when it is completed, but will remain efficient until accident, decay, or the interference of people not acquainted with the subject has impaired its efficiency.

A TRULY AUTOMATIC FIRE DETECTOR.

By CHAS. E. GRITTON, A.M.Inst.C.E.

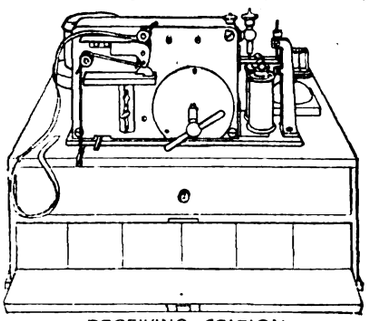
LAST week I attended a most interesting demonstration of the May-Oatway Detector and Fire position indicator at the city office, 53, New Broad Street, E.C., for buildings, collieries, ships, etc. It is adjustable, cheap, prompt, and exceedingly simple. This system does not depend upon fusion, and the extensive range and extreme delicacy of its heat detector enables it to signal the small fluctuations of low temperature which sometimes cause disastrous results in cool stores and freezing chambers.



TRANSMITTING STATION

Professor Black, M.A., D.Sc.Edin., says: "It will, I have no doubt, be some day made compulsory by Act of Parliament to fit up all wool, coal, and grain carrying ships for long voyages, with such an invention as Mr. May has provided." Mr. Chas. E. May, is the Senior Mechanical Electrician to the Government of New Zealand.

The system is being run over here by a company under the style of The May-Oatway Fire Appliances, Limited, with as chairman, Sir Eyre M. Shaw, K.C.B.; as managing director, Mr. G. H. Oatway; and as consulting electrical engineer, Sir W. H. Preece, K.C.B., F.R.S., who states that he considers this system reliable and thoroughly practicable. In the land of its birth it is in general use, sending its warnings over the ordinary municipal street alarm wires direct to the fire brigade. The Government of the Colony have ordered its adoption for the Industrial School.



RECEIVING STATION

The invention consists of two principal portions, a detector and a position indicator, both actuated by heat and gravitation. The accompanying illustrations show some of the appliances.

The un-named block pictures the copper wire C attached to and protected by a metal guard D, which is fixed just below the cornice, and runs the whole length of the room without a break. Heat causes the wire to lengthen, and

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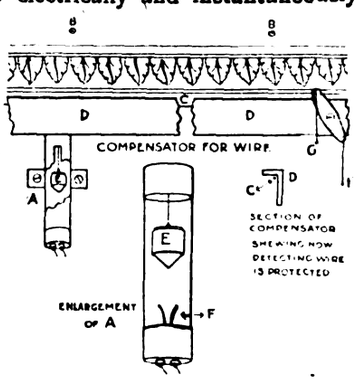
the bridge E to drop between the terminals F, thus closing the circuit, and electrically and instantaneously giving the alarm, and indicating the exact position of the outbreak.



The guard D has another most important function, viz., that of preventing false alarms and consequent brigade out-turns. The drawback to the old automatic fire alarms is that any set unalterable alarm point must be too high for winter or too low for summer, and the practical impossibility of discriminating between safe seasonal variations of temperature in the case of fusing media and thermometers often causes those devices to go off in practice when they should not, or in other cases such a high temperature is needed that their value is impaired. The guard D overcomes both these serious defects, expanding and contracting with slow gradations of temperature and acting automatically as a counter-poise to the more sensitive wire. When a fire breaks out, the wire having a higher co-efficient of expansion and much smaller cross sectional area than its counter-poise, expands more rapidly, and the alarm is given; on the other hand, when the temperature has risen *gradually* from steady warmth, both move in unison, and false alarms are prevented.

A pull on the lever G makes contact, and tests, without trouble or heat, every unit of the system.

Of the two principal defects which have been responsible for the decease of almost every appliance used since 1763, when one, John Green, took out the first British patent for the detection of fire, the above simple arrangement overcomes one. The other has been inadequate heat-collecting surface.

If it be assumed that the Section DD represents one-half of a room 20 feet long, BB are shown proportionally to represent mercury circuit-closing thermometers or fusible plugs, usually placed 10 feet apart. A fire arising in any part of the room will affect each device; the wire, collectively, through its entire length; the two appliances BB, each without relevance to the other, the great body of heat between them being wasted. Thus we have a continuous thermometer as long as the room, instead of dealing disjointedly with odd parts of it only, as in other systems.

There is no useless and harmful deluging; the rooms on fire are indicated, while those still safe, although possibly smoking badly, are shown as safe, until the fire reaches them. No human initiative is needed, the premises may be unoccupied at the time, but within a few seconds the brigade will be summoned and, on arrival, shown the position and extent of the outbreak. In the course of an exhaustive report upon the system, Sir W. H. Preece says: "The system, as a whole, is built upon well-ascertained scientific principles."

THE INSTITUTION OF CIVIL ENGINEERS.

THE annual general meeting of the Institution of Civil Engineers was held on the 30th ult., Mr. James Mansergh in the chair. The result of the ballot for the election of officers was declared as follows:—President, Mr. Charles Hawksley; vice-presidents, Sir William H. White, Mr. J. Clarke Hawkshaw, Mr. F. W. Webb, and Sir Guilford L. Molesworth; other members of council, Mr. James Barton (Dundalk), Mr. Horace Bell, Sir Alexander Binnie, Mr. B. Hall Blyth (Edinburgh), Mr. C. A. Brereton, Mr. T. Forster Brown (Cardiff), Mr. R. Elliott Cooper, Mr. G. F. Deacon, Mr. W. R. Galbraith, Mr. G. H. Hill, Mr. J. C. Inglis, Dr. Alex. B. W. Kennedy, F.R.S., Mr. A. G. Lyster (Liverpool), Mr. J. A. McDonald (Derby), Mr. E. P. Martin (Dowlais), Mr. William Matthews, C.M.G. (Westminster), Mr. Alex. Siemens, Mr. Thomas Stewart (Cape Town), Mr. J. I. Thornycroft, F.R.S., Professor W. C. Unwin, F.R.S., Sir E. Leader Williams (Altrincham), Mr. C. W. Darley (Sydney), Mr. E. P. Hannaford (Montreal), Mr. William Shelford, C.M.G., Mr. John Strain (Glasgow), Mr. F. R. Upcott, C.S.I. (Calcutta). The council of the Institution of Civil Engineers have made the following awards for papers read and discussed before the institution during the past session:—A George Stephenson medal and a Telford premium to Mr. Harry E. Jones; Telford medals and premiums to Mr. G. A. Hobson and Mr. E. Wragge; a Watt medal and a Telford premium to Mr. Joseph Husband; Telford premiums to Mr. J. T. Ford, Mr. L. L. Buck, Mr. W. H. Stanger, Mr. B. Blount, and Mr. W. J. Doak; Crampton prize to Mr. E. Sandeman.

TRADE NOTES.

THE new steam laundry, which is presently being erected at Queen's Park, Glasgow, is now well advanced. The ventilation is being carried out by Messrs. Cousland & Mackay, ventilating engineers, Glasgow and Manchester. The type of ventilator which has been adopted is their patent direct-acting Louvre ventilators.

MESSRS. WM. POTTS & SONS, clock manufacturers, Leeds and Newcastle-on-Tyne, have received instructions from the Mayor and Corporation of Newcastle-on-Tyne to erect new clocks at St. Mary's Church, Rye Hill, and St. Anne's Church, Newcastle-on-Tyne. They are also making new clocks and chimes for St. Mary's Parish Church, Ambleside, Westmoreland, and Ledsham Parish Church, near South Milford, West Yorkshire, and a large illuminated clock for the county of Durham.

LOW'S PATENT SANITARY PIPE JOINT SYNDICATE, LIMITED, Dashwood House, New Broad Street, E.C., have recently effected an arrangement with Messrs. J. Stiff & Sons, of Lambeth, whereby this well-known firm become their sole agents for London and Suburbs. The advantages claimed for this form of joint are, that it is a perfect and reliable water-tight joint as soon as it is made; that a number of pipes can be jointed on the surface of the ground before laying them in the trenches; that the elasticity of the joints gives absolute security against the escape of sewer gas from the joints, which so frequently occurs with other systems of drain pipe jointing; and that the pipes being socketless lie, more evenly when laid.

MR. ERNEST KILBURN SCOTT, M.I.E.E., A.M.I.C.E., has taken up the position of engineer and manager (United Kingdom, Colonies and Egypt) to the International Electric Company of Liege, the London offices being at Clun House, Surrey Street, Strand, W.C. Besides the ordinary run of electric lighting work, Mr. Scott proposes to give special attention to the application of continuous and multiphase motors to machine driving in factories, iron and steel works, etc.; also to mining work, electric traction for tramways and railways, and to long distance power transmission. The International Electric Company of Liege is the most important electrical concern in Belgium, and was founded in 1889 by Mr. Henry Pieper, general director, the manager and technical director being Mr. C. J. Melms, who, as manager for Messrs. Brown Boveri & Co., Frankfort, personally supervised the construction and operation of the Frankfort Municipal Electric Station, one of the largest central power stations in Europe, having a single-phase motor load of upwards of 6,000 horse-power, including three motors of 750 horse-power for working the city tramways. The company has supplied machinery to a number of important firms in the United Kingdom at Middlesbrough, Hartlepool, Sunderland, Dumbarton, Glasgow, Belfast, and South Wales.

THE Lord Chief Justice and Mr. Justice Lawrance, on the 2nd inst., heard an appeal from a decision of the justices sitting at Castleford, who had refused to make an order for the abatement of a nuisance in Regent Street, Castleford, by putting nine houses there in a proper state of repair. Their lordships again sent the order back with instructions to make the order.

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The British Architect.

LONDON: FRIDAY, MAY 24, 1901.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.—The FINAL AND SPECIAL EXAMINATIONS will be held from the 21ST to the 28TH JUNE inclusive. Applications must be sent in on or before the 24TH MAY.

The Testimonies of Study, &c., with the necessary fees, must accompany the applications, all of which are to be addressed to the undersigned.

W. J. LOCKE,
Secretary R.I.B.A.

No. 9, Conduit Street, London, W.

SOME LEGAL CASES AFFECTING ARCHITECTS.

SOME rather important and certainly interesting cases affecting architects have just been decided in the law courts. Two of them at least seem to be specially worthy of notice.

In the first a somewhat curious point of law is involved, and was decided in the Chancery Division of the High Court of Justice last week. An architect was, by agreement, bound not to practise as such in a certain town. But in response to an advertisement inviting competitive designs for a public building in this town the architect sent in a design. This design met with the approval of the promoters of the competition, and was finally selected by them for execution. But the author was immediately made the subject of an action at law to restrain him from practising as an architect in this particular town, or employing anyone to do so on his behalf. Mr. Justice Kekewich tried the action, and decided that whilst the fact of entering the competition and preparing the design was no breach of the agreement, yet if the architect in question superintended the erection of the buildings he would be practising as an architect, and should, therefore, be restrained from doing so. We understand there is to be an appeal, but we should say that Mr. Justice Kekewich's decision is right and just, unless there was a specific written understanding to the effect that a distinction was to be made between the ordinary regular practice of an architect and the taking part in a competition. For clearly, if an architect designs and erects a building, even through the medium of a competition, he is practising as an architect in the town for which the building is designed—at any rate, for the time being. Of course, it may be said that if an architect from Bolton wins a competition in Sunderland, as was the case some little time ago, he still remains a Bolton architect, and would not be described as a Sunderland architect. This might be so, but all the same the Bolton architect would be practising as an architect in Sunderland for the time being, even though he might never afterwards do another job in the place. At least, that is our opinion, and we await with interest the result of the appeal.

In the second case the question was as to the legal right of an architect to demand more than 5 per cent. for his services, which in this case were of a special character, since no builder was employed. The architect claimed 10 per cent. on the ground that he had an agreement with the building owner whereby he was to keep and pass the accounts, and generally act as builder as well as architect. For his extra services as builder he considered he was entitled to an extra 5 per cent. beyond the usual 5 per cent. as architect. The building owner considered 5 per cent. sufficient, as being the usual fee for an architect's work, and it is important to note that certain architects called as witnesses for the defence, including Mr. Gruning, vice-president of the R.I.B.A., upheld the building owner's contention that 5 per cent. would be the proper remuneration. Mr. Justice Kennedy, who tried the action, held that the plaintiff's claim as a whole was untenable, but at the same time he considered that the plaintiff had done more than he would have done under ordinary circumstances for 5 per cent. He therefore thought plaintiff was clearly entitled to something over 5 per cent., and, taking everything into consideration, he held that plaintiff was entitled to 7½ per cent., with the exception of certain specified small items, and in addition he was entitled to certain expenses which were admitted.

By actual agreement the plaintiff undertook to do more than the usual work of an architect in the ordinary course of business, and this the defendant must have known. How comes it then that the question of remuneration for these extra services was not duly considered and determined beforehand between the parties? Evidently it was not, for we have Mr. Justice Kennedy saying it would have saved a great deal of annoyance and trouble if both parties had put down at the outset the terms of the plaintiff's employment in black-and-white. Of course this is just what should have been done, and yet it is astonishing with what frequency such an important and essential point is allowed to "slide." The architect is, perhaps, a little delicate on the subject sometimes, and hesitates about broaching the subject to his client lest he may upset matters in any way. The client may understand or he may not. But it is always the safest and wisest course for any architect to have the question settled beforehand, and the terms plainly set down in black and white. For since the R.I.B.A. Schedule of Architects' Charges is of no legal value a client may at any time repudiate the charge of 5 per cent., and then it becomes entirely a matter of evidence and the judge's view of the case.

There is another point in this case which is of special interest. The architect acted as builder as well as architect. In this way he was clearly entitled to further payment. But upon what scale? He could scarcely act as a builder in the ordinary way of giving a contract price and charging the builders' usual profit. For then he would violate his position as an architect in regard to trade discounts. In one way the 5 per cent. he thought he was entitled to does not seem an out-of-the-way amount, though possibly the extra superintendence and work was perhaps not quite so great as the architect was inclined to make out. So on the whole we think we may take it that Mr. Justice Kennedy decided fairly. But we must say that this combination of architect and builder is not in our opinion one to be commended save in very rare cases. It cannot but lay the architect open to suspicions which would inevitably arise, however honourable and upright the man might be.

THE ROYAL ACADEMY EXHIBITION.

THE ARCHITECTURAL GALLERY.

THERE are only 166 exhibits here and we suppose there will be no two opinions amongst our readers as to the poverty, both in quantity and quality, of the architectural gallery this year. Sometimes the lack of important works is more than compensated for by the interest of others. But this year even that pleasure is denied us, and we miss even the resource usually left to us, of a number of interesting examples of domestic architecture. Of course it is not altogether the failure of architects to supply the interest required, for we have in our possession now, charming rejected drawings which would have done something to redeem the show, both as admirable essays in colour and architectural illustrations, and our contemporaries could tell the same tale. Why, in the name of commonsense, is it necessary to go on exhibiting a lot of commonplace stuff unworthy the name of architecture, when really good men, whose work is a credit to the country, see their drawings rejected year after year? The merely effective decoration of the walls is surely a bagatelle compared to the question of encouragement or discouragement to good or bad architecture. More and more does it compel the true artist to seek his consolation from his own inner consciousness, and determine to link none of his hopes or aspirations with the Royal Academy of Art.

Amongst small buildings of a public character it is satisfactory to know there has been a well-marked improvement in recent years. The "New Town Hall, Marlborough" (1622), by Charles E. Ponting, is a case in point. This nicely-proportioned building stands in an open square on a slightly sloping site, and will undoubtedly form a pleasing and picturesque architectural feature in the town. It has

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a high-pitched roof with projecting eaves, and cornice decorated with medallions. The lower story is of brick, and the upper floor rough cast. There is a suspicion of thinness in the detail, but the general distribution of the design is decidedly good.

Another building of this class, and very satisfactory in its proportions, is the proposed "Technical School, Warrington" (1655), by William & Segar Owen. The solid, simple treatment, with a good effect of scale, is noticeable. Another good example of street architecture is Mr. E. W. Mountford's "New Premises in Cowcross Street, E.C." (1610). The whole effect of this dignified and broadly-treated Renaissance building is good, and the sculptured frieze of agricultural subjects between the upper floor windows promises well. Mr. A. H. Tiltman's "Eastern District Hospital, Glasgow" (1626), is a well-balanced good Renaissance front, in which the disposition of features is well managed.

In his "New Medical Laboratories, Netley" (1542), Mr. E. S. Prior is under the shadow of the Latin Renaissance with its soul-destroying hardness and pretentiousness; one would better like him to be himself! In the "School of Economics, University of London" (1535), Mr. Maurice B. Adams achieves some interest out of a flat frontage. Mr. Leonard Stokes' "New Town Hall Schools" for the Oxford School Board (1527), is of a late Renaissance type owing its value, as does all this artist's to work, to its good architectural qualities of proportion and emphasis, above all mere question of style. In an earlier manner is his picturesque "Central Boys' School in the Cattle Market, Oxford," which is interesting both in the plan and its picturesque expression. Mr. H. H. Statham's work always commands attention, and in its general proportion one finds much to admire in the "Piers and Facing of Vauxhall Bridge" (1534). But we are amazed at this able writer's view of the function of vouissours in design; in comparison with this the design of the balusters is a trifle. The first premiated design for the Belfast University Hall (1572), by Mr. Rupert Savage is a fairly successful building in an eclectic modern manner which by no means marks the full power of this architect. The plan indicates the chief value of a design which has been thrown overboard to the surprise and reprobation of, we presume, the whole of the profession.

There are few good examples of street architecture this year, and "The Rebuilding of Reynolds' House, Leicester Square" (1589), is certainly amongst the best. Messrs. Wimperis and East know very well how to bring originality of treatment into harmony with modern requirements. The part we do not quite like is the ground floor, which is hardly bold and vigorous enough for the rest.

Mr. W. Emerson's "Hamilton House: Employers' Liability Assurance Corporation" (1582), looks better in the reality on the Thames Embankment than it does in the drawing. It is a somewhat heavy and curious mixture of Renaissance detail, and we cannot agree that the pilasters which decorate the front are a happy expedient.

The best building of its kind this year is possibly Mr. J. S. Gibson's "Town Hall and Municipal Buildings for the Corporation of Walsall" (1639), poorly illustrated in a black ink outline drawing. There is certainly not much festive originality about this design, and it lacks that amount of gaiety of detail one has often associated with Messrs. Gibson & Russell; but it is a pleasing treatment of familiar features. Personally, we do not quite like the varying scale in the windows, which, to our mind, make the solids and voids not quite happy. The "Rebuilding of Bank Buildings, E.C., for the Governor and Company of the Bank of England" (1646), by Arthur C. Blomfield, is a very ordinary specimen of building, shown in a tame pencil outline view. Though so tame in treatment it can hardly claim to be dignified by way of compensation. The "Baptist Church House, Southampton Row" (1658), by Arthur Keen, is not a great success for a commanding site. The outlines are not pleasing, and there is a great lack of breadth and dignity; we expected better of its author. No attempt has been made to give anything of an ecclesiastical look to the building, and though this may be well enough, it surely demanded something to mark it out from a purely commercial structure. Messrs. T. M. Lockwood & Sons' picturesque "New Bank Buildings, Chester" (1690), is a piece of work not unworthy of its site.

NOTES ON CURRENT EVENTS.

WE regret to hear of the death of Mr. Arthur Cates, F.R.I.B.A., who for many years was well-known as surveyor to H.M. Woods and Forests Department, in which capacity he acted as architectural adviser to the Commissioners of H.M. Works in respect to Crown property. Mr. Cates entered the profession through the office of Sydney Smirke, R.A., of whom he was a pupil. He was afterwards for seven years in the office of James Pennethorne. Though almost exclusively known during the past 20 or 30 years as a surveyor and arbitrator, yet Mr. Cates had practised as an architect during the earlier part of his professional career, and in all his connection with the Royal Institute of British Architects manifested the keenest interest and sympathy with the prosperity and progess of architecture. He was a most able and diligent advocate for the cause of architectural education, and perhaps this was the subject he had most at heart. He beame an examiner under the old system of voluntary examinations in connection with the R.I.B.A. in 1877, and was appointed chairman of the Board of Examiners under the new regime of compulsory examination in 1882, an office he continued to hold until 1897, when he retired.

MR. CATES joined the Royal Institute of British Architects in 1856, and from the first took an active interest in its affairs. No one has done more for the advancement of architectural education than Mr. Cates. In every possible way he sought to increase the educational facilities for architectural students, and the Architectural Association found in him an ardent and generous supporter of their various educational schemes. He joined the Association in 1847, and has been a subscribing member ever since. Mr. Cates was also a member of the Architectural Publication Society, and one of those who had a large share in the compilation of the "Architectural Dictionary." He was the chairman of the Tribunal of Appeal. At the time of his death Mr. Cates was contributing a series of interesting and useful papers to the R.I.B.A. *Journal* on architectural education on the Continent and in the United States. We have also to regret the loss of an old and valued contributor to our "Friends in Council" symposium. Mr. Cates was in his 73rd year, and his remains were cremated at Woking on Saturday last. As a man of much business tact and capacity, and genial, unassuming disposition, Mr. Cates won the respect and friendship of all who came in contact with him.

THE members of the Royal Institute of Architects of Ireland entertained the President, Sir Thomas Drew, R.H.A., at a dinner in the Central Hotel, Dublin, on the 15th inst. The chair was taken by Mr. J. Rawson Carroll, F.R.I.B.A. After dinner the chairman, on behalf of the members, presented to Sir Thomas Drew a gilt silver cup and cover, bearing the following inscription:—"From the members of the Royal Institute of the Architects of Ireland to their President, Sir Thomas Drew, as a mark of affectionate esteem on his receiving the honour of knighthood, Anno Domini, 1900." The cup is a copy of one made in the reign of Charles II., the original being in the possession of the Grocers' Company, one of the oldest of the Guilds in the City of London, and is known as the John Saunders Cup, after the donor. The bowl is supported on a baluster stem, resting on a foot, the whole being chased in bold repousse work and richly gilt. In the inside of the cup is a crown piece of the date of Sir Thomas's knighthood, and in the foot a similar piece showing the effigy of her late Majesty Queen Victoria. An interesting feature of the presentation is that it embodied in the cup two other pieces of plate much valued by Sir Thomas—one a "Master Apostle's" spoon of the 16th century date, presented to him at his birth, and the other, set in the face of the cup, a medal of the Institute of Architects won by Sir Thomas in his student days. The gathering was a remarkable testimony, says the *Irish Builder*, to the esteem in which Sir Thomas Drew is held by his professional brethren.

THE committee and other officers of the Architectural Association for the session 1901-1902 are as follows:—President, Mr. W. Howard Seth-Smith; vice-presidents, Messrs. G. B. Carvill and E. Guy Dawber; committee, Messrs. A. T. Bolton, F. D. Clapman, W. A. Forsyth,

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H. T. Hare, Hon. A. McGarel Hogg, Arnold Mitchell, W. A. Pite, G. H. Fellowes Prynne, W. A. Raffles, and E. Howley Sim; hon. treasurer, Mr. Francis Hooper; hon. librarian, Mr. F. J. Osborne Smith; hon. secretaries, Messrs. R. S. Balfour and H. P. G. Maule; hon. solicitor, Mr. W. H. Jamieson; hon. assistant librarians, Messrs. C. H. F. Comyn and W. A. Jeckells; hon. auditors, Messrs. E. Greenop and Guy M. Nicholson; and secretary and registrar, Mr. G. D. Driver.

THE Council of the Society of Architects purpose holding meetings at Edinburgh and Glasgow on the 29th and 30th inst. respectively for the purpose of discussing the Architects' Registration Bill, now before Parliament, and ascertaining the attitude of the architects of Scotland towards the principle contained in such Bill. Mr. Ellis Marsland, hon. secretary of the society, will introduce the subject at each meeting by a paper, and Mr. Walter L. Emden, the president of the Society, will take the chair.

THE members of the Edinburgh Architectural Association on Saturday last visited Dunfermline, where, through the kindness of Colonel Hunt, of Pittencrieff, they were enabled to inspect the old house of Pittencrieff, with its various old articles of furniture, pictures, etc. Mr. John Houston, architect, Dunfermline, acted as leader, and read descriptive accounts of the house and picturesque glen in which it stands. The party then drove to Pitfirrane, where they were received by Sir Arthur Halkett, Bart., who gave a most interesting account of the house, and recalled how it had been inhabited by the Halketts of Pitfirrane since 1437. Some very old charters, curios, pictures, etc., were also exhibited, and all the old historical associations recalled. Sir Arthur, at the close, was warmly thanked for the privilege and welcome he had extended to the members, and for affording them one of the most interesting visits of the session.

THE trustees of the Chantrey Bequest have, for the first time, bought a woman's picture. This is "Lord Dundonald's Dash upon Ladysmith," by Miss Kemp-Welch, which has also attracted several offers from private purchasers.

AN exhibition of pictures was opened on Tuesday afternoon at the Bermondsey Settlement by Lord Llangattock. The collection consisted of 125 works, which included Sir Joshua Reynold's "Black Servant," and pictures by Sir John Gilbert, G. F. Watts, Alfred Parsons, F. Goodall, T. Sidney Cooper, D. Roberts, and Professor H. von Herkomer.

AN exhibition will be held at 4, Bloomsbury Square, London, W.C., from May 29th till June 29th, consisting of black and white drawings, prints, and water colours, by Mr. James J. Guthrie, and black and white drawings, designs for the decorative treatment of interiors and painted gesso, by Mr. Andræas D. Carse.

AT Fontainbleau on Sunday afternoon last the monument raised to the memory of Rosa Bonheur in the Place Denecourt was handed over to the mayor of the town. It has been given by M. Gambart, Spanish Consul-General at Nice. The monument, which is five metres in height, is composed of a base of Lorraine stone supporting a bull of bronze, an enlarged reproduction of one of Rosa Bonheur's sculptural works. Into the base are fitted four bas-reliefs. The first of these is a portrait of Rosa Bonheur, the remaining three being representations of her principal pictures.

THE memorial headstone to mark the grave of Mr. Ruskin in Coniston Churchyard, which has been in preparation some time, has now been placed in position. It has been executed from the designs of Mr. W. G. Collingwood. The material is of the grey stone of the local Tilberthwaite Quarries, pleasing to the eye and likely to be extremely durable. Its form is a tall cross, after ancient models of the pre-Norman Conquest period, standing upon a base cut into three calvary steps, and the whole attains a height of about 9 ft. 6 in. The only inscription is the name "John Ruskin" and the dates 1819-1900, the rest of the surface being elaborately carved with a series of symbolical designs representing the chief writings of Mr. Ruskin,

THE Executive Committee of Truro Cathedral Committee met on Saturday to make arrangements for the erection of the central or Victoria tower, the cost of which is to be borne by Mr. J. H. Dennis, in loving and respectful memory of our late lamented Sovereign, Queen Victoria. The Treasurer (Mr. A. P. Nix) said the architect, Mr. Pearson, had obtained a builder's estimate for the erection of the tower, the amount of which was somewhat below the sum now promised by Mr. Dennis. It was decided to instruct Mr. Pearson to obtain a signed contract and proceed with the work as soon as possible. A committee was afterwards appointed to select subjects for the statuary around the Cathedral. It was mentioned that niches had been provided for 87 figures, the total cost of which was estimated at over £1,500. The figures will cost from £5 to £50 each.

IT was stated at a meeting of the Board of Management of the Manchester Royal Infirmary that the special committee appointed to consider the question of the rebuilding of the infirmary were giving careful attention to it, and proceeding as expeditiously as possible under the circumstances.

ON Thursday last the London County Council decided to purchase a site at the corner of Southampton Row and Orange Street, Bloomsbury, for £45,000, and erect thereon buildings in which to house the Central School of Arts and Crafts now located in Regent Street. The cost of a suitable building is estimated at about £60,000.

MR. W. J. MORLEY, F.R.I.B.A., 269, Swan Arcade, Bradford, has taken his son, Mr. Richard Morley, into partnership, and the business will in the future be carried on under the style of W. J. Morley & Son.

A COUNTY surveyor is wanted for Northampton at a salary of £350 per annum, with liberty to undertake such professional work on his own account as shall not interfere with his official duties. Travelling and other expenses are also provided for by the County Council.

THE borough surveyorship of Wolverhampton is vacant, and applications from suitable candidates are invited. The salary is £600 per annum, and the candidate appointed will be required to devote the whole of his time to the duties of his office.

THE annual meeting of the National Photographic Record Association was held on Wednesday afternoon. Mr. G. Scamell, the hon. secretary, read the report of the council, which stated that the association had made steady progress during the year, and that the value of the work was now universally acknowledged. Since February, last year, 669 prints had been received, the chief contributors including the Duke of Bedford and Sir. J. Benjamin Stone. Among those sent by the latter was a series of Stratford-on-Avon, and of some of the old customs, such as the collection of the Wroth Money at Knightlow Hill. New societies had been started at Hull and Leicester, as well as in Switzerland, Sweden, and Belgium. After the report had been adopted, Mr. G. A. Storey, R.A., in proposing a vote of thanks to the council, recommended that intead of "touching-up" old pictures artists should trace upon them without interfering with the original. Sir J. Benjamin Stone was re-elected president, and the new council included Lord Crawford, Sir E. M. Thompson, of the British Museum, and Sir H. T. Wood, of the Society of Arts.

AN interesting discovery has been made in Peterborough Minster precincts. In the course of removing the rubble which filled one of the many pointed arches in the wall at the eastern extremity of the palace gardens a window of beautiful tracery was revealed. The stonework was in an excellent state of preservation, and only a small portion of one column was missing. It is intended to unseal the neighbouring arches in the hope that similar archæological treasures may be found. The wall originally formed part of a passage leading from the cloisters to the monks' kitchen.

THE excavations which are now going on at the Taranto Arsena have led to the discovery of a number of Greek

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and Roman remains. A number of Greek tombs (says the Rome correspondent of the *Morning Post*) containing vases covered with figures, Roman tombs ornamented with frescoes, and a small temple have come to light. In addition, the old Roman necropolis at Taranto has been found. The tombs are chiefly built of terra cotta tiles, or dug out of tufa blocks. Many evidences of the constant practice of cremation have been discovered in the form of funeral urns and boxes of stone closely sealed. Special care is being taken to reproduce the frescoes before they fade. The rest of the objects will be placed in the Archæological Museum at Taranto.

A JOINT committee formed from the Health and Estates Committees of the Birmingham Corporation have approved a scheme for the erection of a set of tenements on the flat system. It is proposed to utilise the whole of the land available for the purpose at the corner of Potter Street and Staniforth Street, 2,974 square yards in extent, for the erection of buildings of four storeys, containing seventy-six tenements of from two to four rooms. Details as to rent, etc., will be decided upon after the scheme has been considered by the Estates and Health Committees.

THE new testing station of the British Fire Prevention Committee was opened on Wednesday afternoon, the opening being preceded by a luncheon and followed by a reception of members and visitors. Among those present were a large number of public officials, including officers from the Royal Arsenal at Woolwich, from Chatham, representatives of the Admiralty, big railway and insurance companies, and leading fire brigades, whilst a very large number of district and local surveyors also took the opportunity of visiting the station. The following tests were undertaken in the course of the afternoon:—One with a suspended coiling protecting an ordinary floor and another with a thin partition, both by the Banks' Fireproof Construction Syndicate, Limited, which were subjected to high temperature for a period of 1½ hours; further, a very important test was undertaken with a heavy warehouse floor, spanning 22 feet, which was subjected to a very severe test for a period of 3 hours, whilst loaded to the extent of 2 cwt. per square foot; this floor was put forward by the the same Syndicate for investigation. The proceedings were in every way successful.

A LIGHTNING conductor over 3½ miles in length is to be found in Bavaria. The top of it is some yards above the meteorological station on the Zugspitze, the highest point of land in the German Empire. It runs down the side of the mountain to a body of running water. The length of the rod is 3½ miles.

THE London County Council decided on Tuesday to establish a training college for teachers. For many years the want of such an institution in London has been keenly felt, not only by teachers intending to enter elementary and secondary schools, but by those desirous of teaching special technical subjects, science, art, and modern languages. Many of the Council's own county scholars have been compelled to go to the colleges in Wales in order to obtain the training that it is not possible to place within their reach in London. It is with a view to putting an end to this state of affairs and to placing London on at least the same educational level as the small Welsh towns that the Council has decided to establish the college under its own control, but in connection with the University of London. The course of instruction will be so arranged that it will be possible for a student who has already graduated to devote himself continuously for a year to the theory, history, and practice of education, and obtain the London University teachers' diploma. At the same time provision will also be made for undergraduate students taking a three years' course in such a way as to satisfy both the requirements of the Board of Education and those of the London B.A. or B.Sc.

COTTAGE homes have just been erected by the Gateshead Guardians near Leadgate, in the Derwent Valley district, at a cost of £15,095, for the housing of the juveniles under their care. There are six homes, each capable of accommodating fifteen children.

ENGINEERING AND SANITARY NOTES.

By CHAS. E. GRITTON, A.M.INST.C.E.

THE "ELECTRIC EXPRESS" BETWEEN LIVERPOOL AND MANCHESTER.

MR. BEHR'S scheme for the construction of a high-speed electric mono-railway between Liverpool and Manchester has successfully run the gauntlet of severe criticism in the inquiry before the House of Lords Committee, which terminated on Friday last after eleven days' sittings. There was plenty of evidence brought forward by the opposition to the proposed Bill embodying the scheme, but the conflict of opinion between the eminent engineering witnesses for and against the Bill could scarcely be adjudicated upon by the Committee. Nothing short of an actual trial of the scheme could safely determine who was right or who was wrong. Nor is it enough to say that railway trains are not accustomed to travel at 110 miles an hour, and that it will be neither safe nor comfortable for passengers if they do. When the London and Woolwich Railway was projected some sixty years ago, the *Quarterly Review* laughed the idea to scorn of people being whirled along at a speed of 18 to 20 miles an hour, and in conclusion remarked:—"We should as soon expect the people of Woolwich to suffer themselves to be fired off by one of the Congreve ricochet rockets as trust themselves to the mercy of such a machine going at such a rate. We will back old Father Thames against Woolwich Railway for any sum." History repeats itself. But the Lords Committee decided to allow the Bill to proceed, subject, however, to the wise proviso that a clause should be inserted guaranteeing that the centre of gravity should be at least 12 inches below the top rail. This the promoters express themselves quite willing to do. I see it is stated that the possibility of the establishment of the new line is generally regarded with favour on 'Change at Manchester. There is no doubt that if the project is realised and is successful, it will afford greatly increased travelling facilities between these two great commercial centres, a matter which is of vital importance to business men in both cities.

THE CARRYING CAPACITY OF GAS-PIPES.

Looking over some old numbers of the *Engineering Magazine* (New York) the other day I came across some very interesting and useful data for calculating the carrying capacity of gas-pipes. This data was contained in an excerpt taken from a pamphlet published by an American engineering firm which remarked: "It is a common idea that the carrying capacity of a pipe is in proportion to its internal area. This is, however, not correct. A pipe 4 ft. in diameter has only four times the area of a pipe 2 ft. in diameter, and yet the 4-ft. pipe will carry 5·66 times as much fluid as the 2-ft. pipe, under the same conditions of length and head. In other words, a 2-ft. pipe will carry 17·6 per cent. or nearly 18 per cent. as much as will a 4-ft. pipe. This proportion of carrying capacity does not hold good for smaller pipes of the same proportionate diameter. A 1-ft. pipe has only 16·6 per cent. of the carrying capacity of a pipe 2 ft. in diameter, and a 1-in. pipe will carry only 14 per cent. as much as a 2-in. pipe."

The pamphlet in question further gives a table setting out the proper values, and from it deduces the fact that "a 6-in. pipe can have 15 per cent. of its capacity carried by a 3-in. pipe, 23 per cent. by a 3½-in. pipe, 34 per cent. by a 4-in. pipe, and a 24-in. pipe will carry 38 times as much as the 6-in. pipe." The table will be found in the *Engineering Magazine* for August, 1895.

MR. EDISON INTERVIEWED.

"In some kinds of heavy machinery," remarked the famous American electrician, Mr. Edison, the other day, to a British interviewer, "you are still well ahead of the world. I hope it may always be so; but you are too slow; too satisfied with cumbersome contrivances." Mr. Edison admits we have no lack of great scientists among us, but we do not make proper use of their discoveries and inventions, of which other nations are too often permitted to reap the first fruits. We are too conservative, he thinks, and too much trammelled by old traditions to make the best of our opportunities, and our legislation is calculated to hamper rather than assist the development of scientific

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inventions. It is interesting to know that Mr. Edison has reaped a substantial reward for his long years of labour in the cause of practical science. He is said to derive from phonographs alone a net profit of £70,000 a year, and he evidently calculates on a yet larger reward from automobiles.

A USEFUL NOVELTY.

I have received from the Patent Solder Company, Limited, of 47, Old Street, E.C., a small box, containing samples in four sizes of their rosin-cored solder, made by patented machinery, with descriptive circular. It is specially adapted for electrical purposes, ready for use without any other flux, and is said to consist of pure metals in guaranteed proportions.

It is free from acids, and flows easily. I have had it tried on brasswork, and it seems a good as well as an ingenious invention. A clean job is readily obtained, dripping and waste are avoided, time and labour saved, and it can be used in positions and under circumstances where the use of a separate flux is not easy. The prices are controlled by the metal market, and quantity bought, and are stated to compare favourably grade for grade with ordinary solder. Contracts are entered into at current prices for 12 months. A new patent label is attached to the box, obtainable at the same address. It is a good one, as it is a matter of extreme difficulty to detach it from any parcel to which it may be tied.

CHINA GLOSS.

Messrs. Thomas Fewster & Son, Limited, of Hull, send me a neat little sample tin of the above white enamel for outside and inside work. They guarantee it to *stand* outside (I expect they mean to last) in the hottest sun without cracking. It has an excellent gloss, is washable, and suitable for the finest indoor work. May be tinted with tube colours, or ground to order in colours. It is not intended for baths. It is claimed to be a permanent slow-setting white, drying hard and remaining elastic. For window frames, bed-rooms, etc., it may be recommended, and requires no varnishing.

THE SALARY OF THE GLASGOW CITY ENGINEER.

The salary of the city engineer of Glasgow was raised at Monday's Corporation meeting from £900 to £1,000 per annum. Certain additions were at the same time made to the salaries of other members of the engineering staff.

ELECTRIC LIGHT PROFITS AT LEEDS AND BIRMINGHAM.

The municipalities of Leeds and Birmingham are reaping the fruits of their enterprise in regard to electric lighting. At Leeds the yearly return, just issued, shows a net profit on the year's working of £14,514 5s. 10d. The Birmingham trading account shows a profit of £27,233 Out of these sums there is, of course, a considerable portion payable to the sinking fund and for interest. Thus the actual surplus works out at £6,881 10s. 8d. in the case of Leeds, and £6,600 in that of Birmingham.

THE GLASGOW INFIRMARY RE-CONSTRUCTION SCHEME.

IT will probably be remembered that some short time ago a limited competition for designs for the re-building of the Glasgow Infirmary took place, and that out of the plans submitted one was finally adopted, which was not included amongst the four designs (placed 1st, 2nd, 3rd and 4th in order of merit) specially recommended by Dr. Rowand Anderson, the assessor. This result gave rise to considerable discussion and protest in the local and professional press. But the Executive Committee regarding Dr. Anderson as acting merely in an advisory capacity held to their decision, and consequently the design by Mr. James Miller, estimated to cost some £240,000, is to be carried out. The reasons for this decision are shortly stated by the Executive Committee in their appeal just issued to the contributors to the scheme, as also their opinion in regard to the alleged probable interference with the appearance of the Cathedral by the new buildings.

In regard to the competitive designs the Executive Committee say:—"The Executive Committee and the managers bestowed on the subject lengthened and painstaking consideration. Authorities on hospital construction were consulted, visits were paid to the best hospitals in Great Britain and America, and the views of the staff of the infirmary as to the general conditions and special requirements of the institution were carefully ascertained. As a result of all this seven sketch plans were, under direction of the managers, prepared by Mr. George Hill comprehending the provisions specified by the staff, and after due consideration agreed to by the managers as necessary for an infirmary which was desired to be abreast of the foremost institutions of the kind. Of these sketch plans two, which were specially selected by the managers, were submitted to ten selected architects, but were distinctly stated to be 'suggestive and illustrative only,' not binding. To assist the Executive Committee in deciding on the competing plans Dr. Rowand Anderson was appointed as their assessor, his function being, as he himself frankly acknowledged, to guide and advise, not to select. When the final selection was made the Executive Committee fixed on a plan which the assessor reported as being one of two which most closely conformed to the sketch plans. The other of these two plans the assessor had placed first of all, but he had not included in his short leet that fixed on by the Executive Committee. Further interviews with the assessor satisfied the Executive Committee that its exclusion arose from no failure on the part of the selected plan in regard to vital or essential particulars, but chiefly from a difference of opinion in regard to the style of architecture and the general elevation—matters on which the Executive Committee ventured to think they were quite entitled to follow their own opinion, and the minority cordially acquiesced in the selection of the majority."

As regards internal arrangements the Executive Committee say they preferred the plan selected for the following reasons:—1. That it provides on the main floor of through corridor communication from end to end of the building without passing through any of the wards. 2. On account of the superior lighting of the wards, by which every bed shall have share of a window for light and ventilation. 3. That the venereal ward shall be isolated from all other wards. 4. That small wards or side rooms are conveniently situated, so that they can be entered without passing through the main wards; and 5. It gives a promenade on the roof for convalescent patients. Like most other plans of similar magnitude, the internal arrangements of this plan are in some respects no doubt open to modification and improvement, and every care will be taken by those responsible for the work to ensure that all the arrangements shall be as perfect as possible.

Respecting the alleged clashing of the new buildings with the cathedral, the Executive remark:—"It has been alleged that the buildings, being so lofty, will dwarf the cathedral. The buildings must be lofty if the hospital requirements of the public are to be adequately met, and the Executive Committee believe that they have shown discretion in approving the architectural style of the adopted plan. It is distinctively Scottish—the national art of the fifteenth and sixteenth centuries, of which we have examples in Heriot's Hospital, Holyrood, Linlithgow, and Falkland palaces, and in our own old college lately in the High Street. It is, therefore, not only appropriate to the historical associations of the site upon which stood the castellated bishop's palace, but permitting, as it does, a limited use of Gothic forms—as in Heriot's Hospital, Edinburgh—it is more in harmony with the cathedral itself than any classic or modern style. It was not, however, this consideration, but the superiority of the plans, which chiefly influenced the judgment of the Executive Committee."

THE Engineer-in-Chief of Public Works for the Department of the Nord has submitted to the municipalities of Lille, Roubaix, and Tourcoing — three of the most important manufacturing towns of France, lying close to one another—a scheme from which some English municipalities might take a hint. It is to connect those three towns by a broad avenue, over six miles long, a Champs Elysees on an American scale, with a line of electric trams and a cycling track along it. The new boulevard will, if constructed, cost £360,000.

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A MODERN VIEW OF LONDON CHURCH ARCHITECTURE.—XIX.

By T. F. BUMPUS.

(*Continued from page* 343.)

BEFORE he quits the vicinity of St. Michael's, Shoreditch, the ecclesiologist should not omit to make the tour of the contiguous convent and hospital of St. Mary at the Cross, if only to see how differently two architects of eminence can manipulate a building of this kind. To prevent disappointment, it is advisable, however, to give notice of the intended visit a day or two beforehand to the Sister Superior, by whom, or by one of those devoted women who undertake to bring help and comfort to the afflicted, sick, and fallen, and to carry on works of mercy full of untold blessings to the dwellers in the poverty stricken district surrounding St. Michael's, he will be courteously received and conducted over this interesting pile of buildings.

They surround a triangular enclosure, of which two sides, the older portion, is Mr. Brooks' work, and the third the late Mr. J. D. Sedding's. That of the former, completed during the early seventies, is edited, so to speak, in that north-eastern French style of the thirteenth century for which Mr. Brooks has so great a predilection, while Mr. Sedding's share of the work, opened on All Saints Day, 1881, is in a late flamboyant of very Flemish type—the entrance gateway in Leonard Square, with its grille (a perfect study in wrought-iron work), arresting the eye at once by its quaint grandeur and admirable adaptation to the site.

The whole group of buildings are of picked stocks, with bands of red brick, and an occasional course of stone. In Sedding's portion of the work the walls are tile-hung and broken up by close slated dormers. The central courtyard is paved with bricks laid herring-bone fashion, and around this are cloisters in two stories—such as one sees attached to the German cathedrals of Halberstadt and Hildesheim—Mr. Brooks' fenestration being of the plate traceried Early French type, and Mr. Sedding's having stone heads of the ogee kind. Behind the latter on the lower level, open out kitchens and stores, and from the upper one the wards presided over by the Sisters for incurable children. Mr. Brooks' cloister has on its south side a mortuary chapel surmounted by the private chapel of the Sisters, the lofty narrow apse of which, confronting to the west-end of St. Michael's, constitutes one of the most interesting features in the group.

In the mortuary chapel the only window is at the east end, ventilation being secured by the admission of fresh air from the outside through chambers formed in the walls, and outlets for vitiated air in channels formed in the thickness of the walls discharging into the open air at the highest point of the building.

Reached by a circular turret staircase, and opening into the upper gallery of the south cloisters is the chapel, quite a gem of revived First Pointed Gothic, with a vault groined in Bath stone, having dog-tooth ornamented ribs. The simple lancet windows, all filled with stained glass by Clayton and Bell, have very deep splays, the inner arch being traceried with two unfoliated arcades surmounted by a circlet likewise plain, an arrangement which imparts an air of additional solemnity to this already most devotional little sanctuary.

The reredos and altar are quite mediæval in their appointments, the former being enriched with appropriately selected paintings; the steps are of marble, and the floor of encaustic tiles, while the miserere seats of the Sisters are of walnut, designed in conformity with the architecture of the chapel, and, like all Mr. Brooks' *instrumenta*, unaffectedly simple without needless cumbrousness.

The organ is located at the west end in a recess about 10 ft. from the floor.

St. Saviour's, Hoxton (near the Rosemary Branch Bridge of the London Canal, whence a remarkably striking north-west view can be obtained), is the next church of this group in point of date to come under notice. Although the smallest, as regards length, it is by no means the least clever and interesting, while its fittings and decorations are perhaps the most beautiful of any. Exteriorly, it is of yellow brick patterned, like St. Michael's, with red, very little stone indeed being used in its construction. Inside the walls are of red brick alone, by which means an air of richness and comfort is imparted to the whole, which, in spite of its humbler proportions, renders it more pleasing than St. Michael's. The styles employed in St. Saviour's, Early Pointed as observable in its fenestration, and Middle Pointed in its columniation, are felicitously blended, both having an Italianising tendency, while the external ensemble calls to mind one of those spacious town churches built in the Low Countries by the Dominicans and Franciscans.

Owing to the restricted site of this church upon a broad plot of ground at the junction of Penn Street and Northport Street, it could not be very long, but it was necessary from its breadth and from the encroachment of houses upon its west and south sides that it should be very lofty. There is, however, considerable space to the north of St. Saviour's whence an excellent general view can be obtained, and from which the cleverness with which the architect has contrived to avoid any unpleasantness that might have resulted from disparity of dimension can be best realised.

Exteriorly this has been effected mainly by the roofing, which, with its ridge-crest of red tiles, is unbroken from east to west, a timber flèche of simple but original contour denoting the commencement of the chancel, and by the broad lean-to aisles which extend from end to end, the small outgabling sacristy at the eastern extremity of the northern one not being sufficiently prominent to interrupt the continuity of line. The simple semi-circular apse is a noble feature in this church's external view, and although its employment has had the effect of diminishing the size of the sanctuary, its use was doubtless dictated by the nature of the site. Seventy-five feet high to the apex of its roof, this apsidal east end of St. Saviour's, with its regiment of tall lancets pierced high up in the wall, "tells" to great advantage whether in a near or a distant view. It takes off from the truncated appearance which the rectangular termination has when used in conjunction with great height and inconsiderable length, and sufficiently proves that neither elegance nor good arrangement need be sacrificed in the use of an economical material when used by a master hand.

It is worthy of remark that Mr. Brooks, when not giving his churches the rectangular termination, invariably makes use of the true semi-circular apsis, and never of that hexagonal edition of it, which, so frequently employed by other architects of the Revival, does not seem to have been a favourite in England during any age of her Pointed Architecture.

At first sight the only apparent distinction between the nave and the chancel of St. Saviour's is effected by the spirelet, but a more careful inspection will reveal that this demarcation has been quietly but decidedly accomplished by the fenestration of the clerestory, that of the chancel and apse being lighted by 13 tall, narrow lancets, and that of the nave by windows of the same kind alternating with a couple of shorter ones surmounted by a foliated circle, all thoroughly brick in their construction. Interiorly the architect, wishful to obtain the greatest idea of length possible under the conditions of site, has attained this by omitting the chancel arch, and by carrying the string course below the clerestory completely round the church without any break, emphasis being given to the chancel and sanctuary by the roof, which in those parts is ceiled, whereas in the nave we have a close succession of semi-circular ribs with tie-beams. Five arches compose the arcade, one of them serving for the chancel, the stone columns being composed of eight amalgamated shafts with conventionally foliaged capitals.

It is formed of two orders—the inner one of stone, the outer of red brick, but there being no drip-stones, some contrast is needed between the latter and the walling, which is of the same coloured material, to take away from an air of weakness which pervades this otherwise most graceful series of arches. The fourth column, on either hand, is raised upon a plinth to bring it to a level with the floor of the chorus cantorum, which, raised three steps above the floor of the nave, is formed within the last bay. This is somewhat narrower than the rest of the arcade, a low wall surmounted by a grille which fills it being returned round the west end, and combining on the north side with the stone pulpit, composes a very substantial and at the same time graceful line of demarcation between the nave and chancel,

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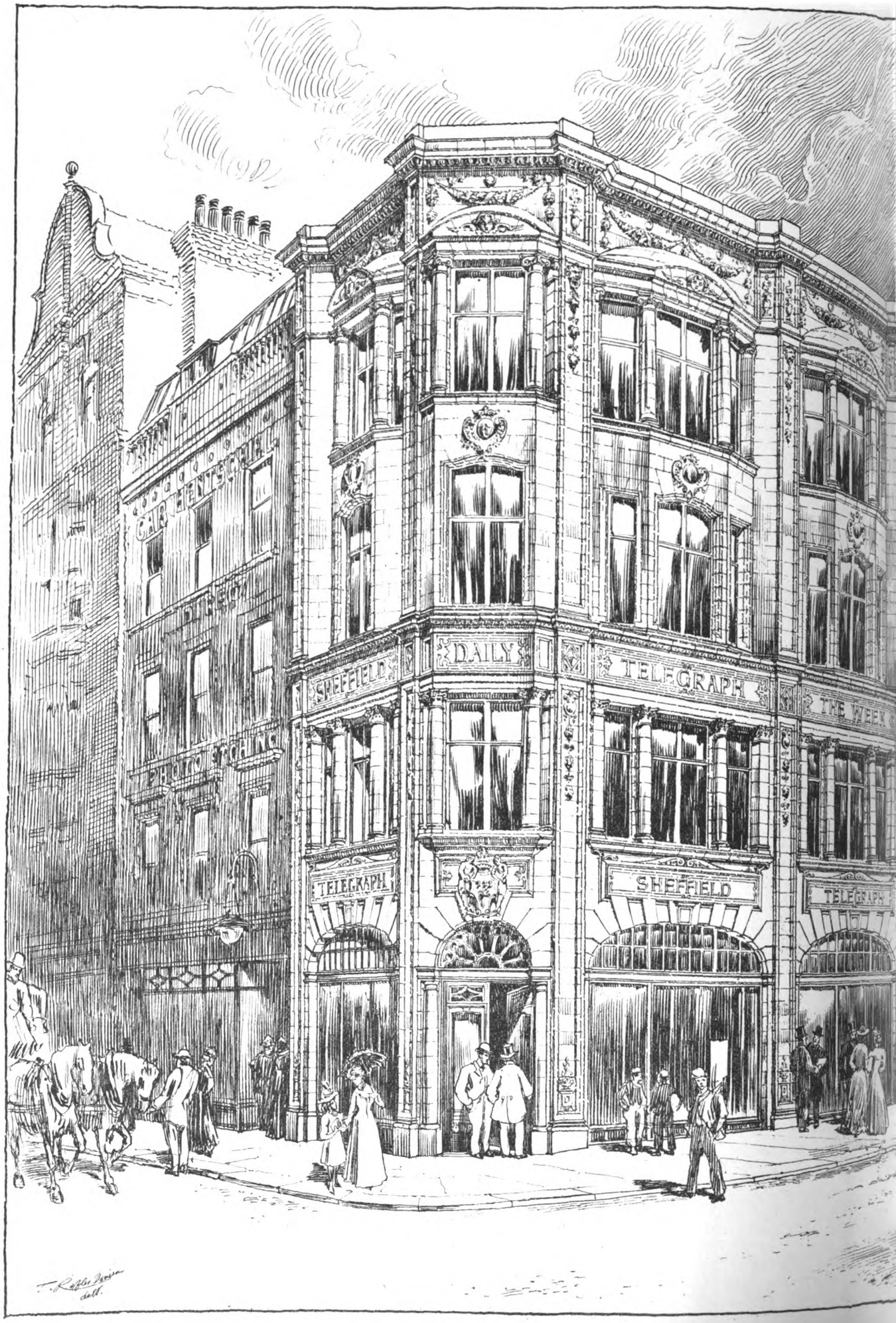

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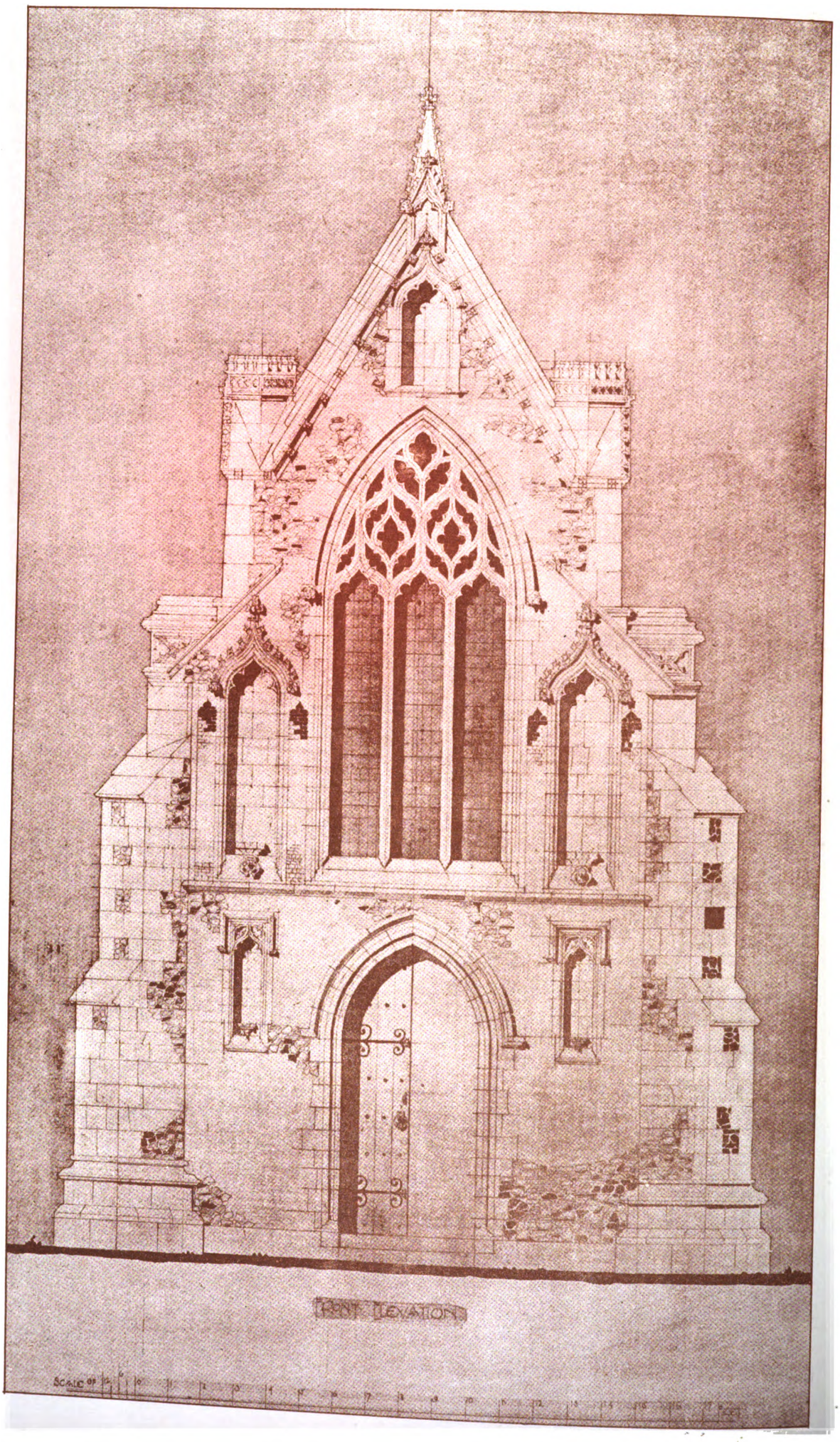

A NORFOLK WAYSIDE CHAPEL.

PLOUGH STUDENTSHIP MEDAL OF MERIT
AWARDED TO C. A. FORBES, SOANE.

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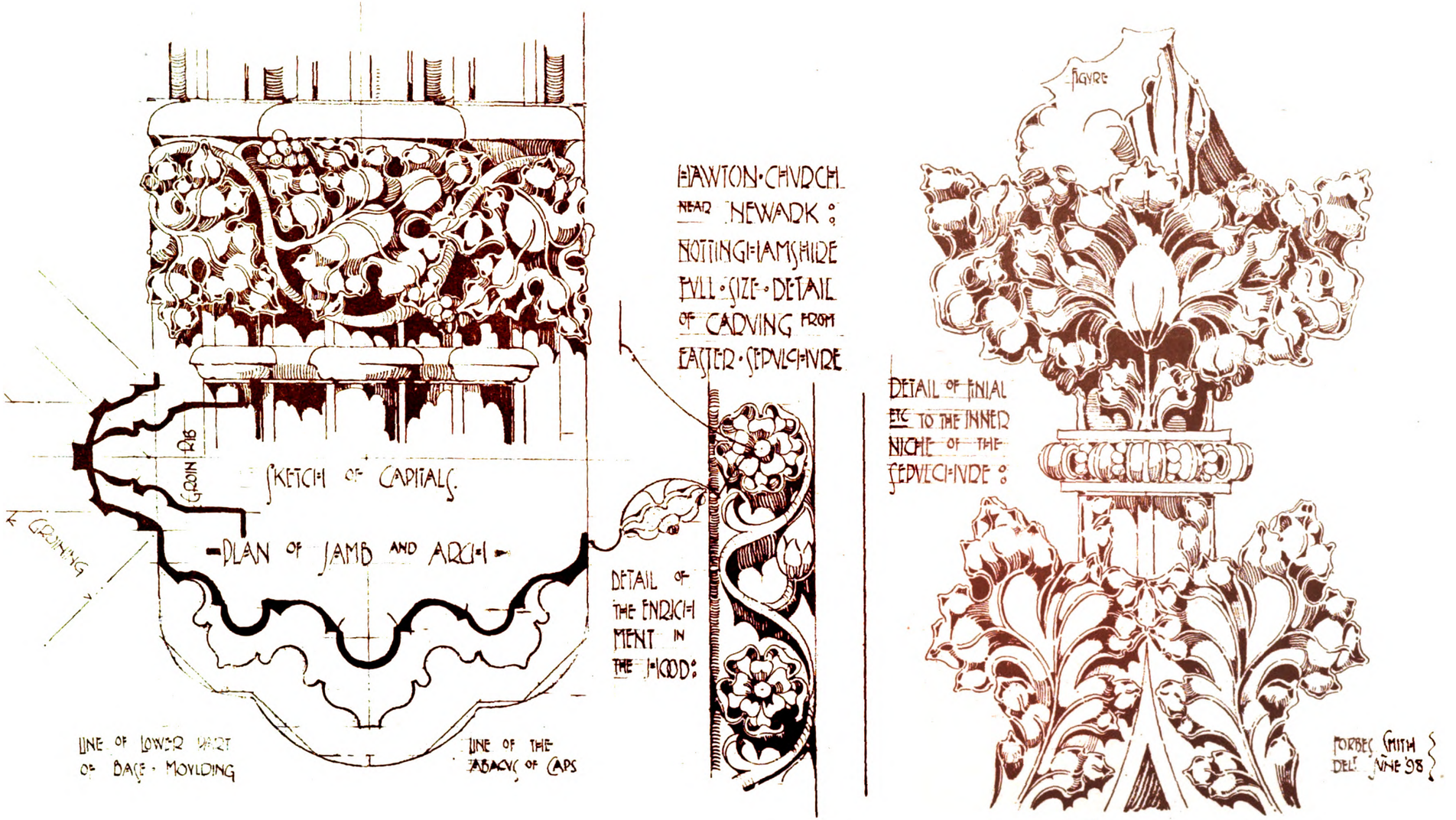
SKETCH OF CAPITALS.
PLAN OF JAMB AND ARCH
GROIN RIB
GROINING
LINE OF LOWER MOST OF BASE MOULDING
LINE OF THE ABACUS OF CAPS
HAWTON CHURCH NEAR NEWARK NOTTINGHAMSHIRE
FULL SIZE DETAIL OF CARVING FROM EASTER SEPULCHRE
DETAIL OF THE ENRICHMENT IN THE HOOD
DETAIL OF FINIAL ETC TO THE INNER NICHE OF THE SEPULCHRE
FIGURE
FORBES SMITH DELT JUNE '98

PUGIN STUDENTSHIP MEDAL OF MERIT
AWARDED TO J. A. FORBES SMITH.

THE BRITISH ARCHITECT, MAY 24TH 1901
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St. Saviour's is rich in decoration, both mural and vitreous. The six shallow arcades lining the apse—three on either side the reredos—have been filled with paintings in fresco, which, breathing quite the Thirteenth Century Italian spirit, are from the accomplished brush of Mr. N. H. J. Westlake, their gold grounds and brilliant tones not only striking a note of rich colour, but harmonising admirably with the surrounding architecture. To the left of the altar are The Transfiguration, The Crucifixion, and The Appearance to the Magdalene; while on the opposite side are The Descent of the Holy Ghost on the Day of Pentecost, The Blessed Virgin receiving the Symbols of Divine Love, and The Session in Majesty. The reredos contains a sculpture, thrown into greater relief by a painted background, of the Ascension, the groups which compose it filling three of those stilted arcades of which the architect is so fond, surmounted by four circles containing half figures of angels, the whole being included beneath a pointed arch and a gable flanked by pinnacled buttresses, somewhat in the school of Butterfield.

Of the 13 lancets which light the apse, five have received their complement of stained glass. The effigy of Our Lord standing with an open book, in the central window, was inserted at, or very shortly after, the completion of the church in 1866. The prevailing tones are crimson and brown, the canopy work is conventionally treated, and the whole forms a remarkably good example of Messrs. Clayton & Bell's work at that period. To this glass a striking contrast is afforded by that in the two windows on either side of it, and for which Messrs. Lavers and Westlake are responsible. Here we have effigies, into which just the right amount of naturalism consonant with their position is imported, of the Evangelists, deep rich tinctures being employed for the robes, which quarries of a greenish-white, quite devoid of canopies or pattern work, set off to admirable advantage. Thus, while a sufficiency of colour is gained, grateful to the eye, and at the same time devotional in spirit, little or no light is excluded, and it is to be sincerely hoped that the completion of this series of lancets will be entrusted to the same hands.

Hardly so successful is the work of these artists at the west end of the church, where, 60 ft. from the ground is a plate traceried rose, and below it, at a distance of 40 ft. from the ground, are a couple of windows, each composed of two lancets surmounted by a foliated circle. At present the rose, which by the way forms so noble a feature in the church's composition viewed externally, has plain glass. The two windows below have memorial stained glass, comprising groups, which, though no doubt exhibiting much excellence of drawing, are somewhat too large for the lancets which they fill, the result being in certain places rather confusing. For windows of this description, and at such a distance from the eye, a more archaic treatment should have been pursued, this being a case in which great clearness was desirable. In illustration of this, perhaps, no more beautiful model can be pointed to than some early work of Messrs. Morris and Marshall in the east window of St. Michael's, Brighton—we mean Mr. G. F. Bodley's portion of that church, whose effect has of late years been completely ruined by the gigantic new church which has been tacked on to its north side.

In the aisles at St. Saviour's, Hoxton, the whole of the stained glass—small groups within elongated squares and on one uniform plan—is Messrs. Clayton and Bell's work, that in the couple of lancet's lighting the rectangular east end of the chapel for Daily Prayer, and representing the Annunciation and the Nativity, being of great excellence.

(To be continued.)

OUR ILLUSTRATIONS.

PUGIN STUDENTSHIP DRAWINGS.

BY J. A. FORBES SMITH.

THE drawings we now publish indicate strikingly the very excellent quality of Mr. Forbes Smith's drawings and his admirable choice of subjects. They were awarded a Medal of Merit.

"SHEFFIELD TELEGRAPH" OFFICES, FLEET STREET, LONDON.

GIBBS & FLOCKTON, ARCHITECTS.

This striking pile of buildings in white faience will form the London home of the *Sheffield Telegraph* and its allied publications for Sir Willian Leng. There is only a small frontage in Fleet Street, the buildings extending chiefly along Fetter Lane.

The building is to be constructed with cast-iron standards and columns, and with steel girders, all protected from fire by concrete or brickwork and with fireproof floors and staircase. The only internal walls to be at first erected are those enclosing the staircase, leaving the whole of the building in two rooms on each floor to be subdivided as may be at first necessary, or hereafter altered from time to time to meet the requirements of the *Sheffield Telegraph* publishing and editorial departments and of other tenants.

Including the basement, which will be light, and the storey in the roof, which will not be seen externally, owing to the height of the parapet and the narrowness of Fetter Lane, there will be six storeys; the ground floor, besides providing for the publishing department, is capable of subdivision into six sale shops, and each of the other floors of subdivision into thirteen offices; those at the front on the second and third floor levels having bay windows. A sanitary block is to be on each floor, with cross ventilation into the back area.

There are two entrances, one from corner in Fleet Street and one from Fetter Lane. The entrance in Fetter Lane is a marked feature in the design. The staircase hall is 17 ft. by 15 ft., and is to have a passenger electric elevator.

The front is to be faced with creamy white Carrara faience, manufactured by Doulton & Co., Limited, which is a good imitation of Carrara marble in colour and texture, and admits of regular cleansing without detriment, The floors are to be mosaic and the walls creamy white faience. The desirability of not infringing the rights of light of adjacent property owners' has dictated the simple skyline.

The builders are Messrs. Perry Brothers, of London, and the architects are Messrs. Gibbs & Flockton, of Sheffield.

THE SOURCES AND GROWTH OF ARCHITECTURE IN EGYPT.

PROFESSOR W. M. FLINDERS PETRIE read a paper before the Royal Institute of British Architects on Monday evening last on this subject.

At the outset he remarked that in no respect was our view of the origins of the arts more enlarged than in the architecture of Egypt. Ten years ago we were starting with the most highly-finished work of the fourth dynasty, the great pyramid of Khufu, and were groping in the dark for any clues to the growth of such surpassing construction To-day it can be shown how every feature arose, and the adoption of stone for building can be dated to a single generation. The unwrought materials, which were everywhere to hand in Egypt, were palm-ribs, papyrus, reeds, maize-stalks, and mud, together with palm-fibre roughly twisted.

A striking sight of the beginnings of the building art may be seen any day in a nomad settlement on the desert edge. Side by side stand (1) a black goat-hair Arab tent, long and low, open always on the leeward side; (2) a tent fenced along part of the open side with a row of maize stalks; (3) a tent fenced all round with maize; (4) a tent in a maize fence mud-plastered; (5) a dwarf wall of brick round the fence; (6) a high brick enclosure with a tent inside to roof it, the tent ropes stretching out through the wall; lastly, a roof is put on the wall, and the tent has disappeared.

The early Egyptians seem, however, to have usually roofed their reed huts with domed roofs, to judge from the engraving of a hut on ivory, at the rise of the First Dynasty (4,800 B.C.) The best feature is the strengthening of the corners of the hut by placing at each angle a bundle of reeds lashed together, as seen in the hut on the mace of Narmer. Here we have the origin of the torus-roll down the edges of the buildings, used till the latest

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stage of the architecture. The lashing together was always retained as an ornament, although the meaning of the roll was long lost.

When papyrus stems were used for walling, instead of reeds or maize stock, the top was rather weak if stripped of its leaves; hence they were retained and bound together, and the feathery tops served as a barrier above the wall, and finally as an ornament.

Besides these materials, palm-ribs may be seen still used for fences. They are set upright with all the leaves on them, at a few inches apart, and strengthened by other ribs interwoven diagonally each way; just below the weak part of the tip a line of ribs is lashed on with palm-fibre, and the loose nodding tips serve as an effectual barrier to men and animals. The whole is finally plastered with mud up to the top lashing, and forms a very strong fence, which will last for many years. Such a fence or wall is figured as the front of an early shrine hieroglyph in the Fourth Dynasty.

Translated into stone, this became the constant feature of every Egyptian building, and the cornice retained to late times the palm-leaf ribbing which proclaimed its origin.

We have preserved to us some views of simple shrines made of the natural materials, similar to the huts of maize stalks still used by the peasant. Here we note the roof sloping backward, and carried on far before the open front, so as to cast a shade, while it is supported on two front pillars of stalks. This was the original type of the rustic shrine adopted as a hieroglyph, and preserved to us from the Fourth Dynasty.

The next material to be noticed is mud-brick, one stage beyond the rough mud plastering. Brick houses and town walls remain from the prehistoric age, probably about 6000 B.C.; and a model of a town wall, with watchmen looking over it, belongs to a rather earlier time.

Regular brickwork developed in use in the prehistoric time, and some arched bricked tombs are probably of this age. There can, however, be no doubt of the barrel-vaulted passage in the tomb of King Neter Khet (found this year) belonging to the beginning of the Third Dynasty (about 4200 B.C.), and the magnificent brickwork and arching of the Fourth Dynasty (about 3400 B.C.) shows a long familiarity and free use of it.

Coming to wrought materials, wood was the earliest in use for construction. The prehistoric graves were often lined with matting, and this was, in the later prehistoric, sometimes supplanted by a wooden lining. In the royal tombs at Abydos (4700-4500 B.C.) all of the wooden sides have been destroyed; but the evidences remain most clearly on the cross walls that were built to form cells around the wooden chamber for the offerings. These walls are plastered and whitewashed on the sides, but the ends are all rough brick, evidently built against a pre-existing timber wall, as the mud mortar has taken the cast of the grain of the wood wherever it touched it. The floors were usually of wood: one of the most complete shows the boards about 2 in. thick, resting on beams at the sides and down the axis of the chamber. The roofing was also of wood, as in some cases the casts of the rough-hewn ends of the roofing beams remain in the brick walls of the chamber. The author referred to the tombs of King Qa (4650 B.C.) and King Zet (4600 B.C.), and gave details of their construction. This form of construction is the forerunner of the greatest architecture of the pyramids. For the wooden chamber we find a stone chamber substituted, and the beams of the roof are of limestone or granite in place of wood. But the continuity of the general form and system is unbroken. The earliest royal tombs are plain pits roofed in, as in the prehistoric time. By 4650 B.C., a wooden lining forms a complete chamber, with brick cells around it, but no entrance. Under Den-Setni, 4600 B.C., an entrance stairway is added on the east side. Under Qa, 4500 B.C., the stairway is turned to the north. And the steps from this to the usual pyramid form a north entrance passage sloping down to a chamber is merely a change of material, but not of form or position. The external form of the mastaba tomb, from which the pyramid was developed (or rather *on* which the pyramid was superveloped) is exactly that of the rectangular mass of sand above the tomb, held in by the retaining wall of mud-brick, with a large external batter, as over the tomb of King Zet.

The author, having referred to the favourite lattice-work, the analogue of the mushrabiyéh work of Cairo, went on to trace the course of stone-working. The first actual building of stone is the pit-chamber of King Khasekhemui, in the middle of the Eleventh Dynasty, about 4350 B.C. The limestone courses are tolerably regular, varying one or two inches either way. The faces of the blocks follow natural cleavages as far as possible; but most of the faces are hammer-dressed, and then adzed over to level them. The joints have plaster in them, and also spread over the open joints on the face. The same king also worked in grey granite, as two large building-blocks with inscriptions of his have been found at Heirakonpolis and at El Kab. But building in limestone was still rare, and it is probably to the latter half of the Second Dynasty, about 4350-4200 B.C., that must be assigned a series of rough stone pyramids, which stand at El Amrah, Nubt, and El Qula. These are all built of unhewn blocks found loose on the desert and cliffs. Each has successive faces of external finish, which have been coated over with added masonry.

The author next described the fine tomb of King Neter-Ket, probably second King of the Third Dynasty, about 4200 B.C.; the great stone pyramid of Saggara, probably of the same date; and the tomb of King Seneferu at Medum (4000 B.C.).

It is important to see clearly how the pyramid structure is derived from the wooden tombs in unbroken succession, as it has by some been derived from the dolmen and chambered burrow. These structures are quite unknown in Egypt; whereas the continuous stages between the prehistoric pit-grave and the greatest and most accurate structure ever built are clearly traceable. Even the preparation for a pyramid remained just the same as for the wooden tombs of the First Dynasty.

The author concluded with some notes on the subject of pillars.

The wooden column appears as an octagon in the models found in the First Dynasty, and in the actual pieces he had discovered in the Twelfth Dynasty, and the copies of such in stone at Beni Hasan. The fluted wooden column is found copied in ivory in the First Dynasty tombs, and is well figured as a hieroglyph in the Fourth Dynasty.

The most peculiar form of column is that derived from the tent-pole. This was the origin of the strange form known as the inverted bell capital in the Eighteenth Dynasty at Karnak.

The earliest example known of the lotus column is of the Fifth Dynasty (about 3600 B.C.). The later examples of the Twelfth Dynasty, of the Eighteenth Dynasty, and of the Nineteenth and Twentieth Dynasties, show only a series of lamentable decadence. Each age in Egypt had its special excellence. In the Eighteenth Dynasty a delicate and freely flowing ornamental treatment; in the Fifth Dynasty the finest figure sculpture; in the Fourth Dynasty the grandest constructions; and in the First Dynasty the most lavish use of hard stones for hand objects and table furniture. Diorite, porphyry, and such materials were cut in thin and beautiful forms with a familiarity which was never known in later times. But every branch of art, when once it had fully grown, decayed rapidly, and the later work in every respect cannot bear comparison with the older triumphs.

THE ESSENTIALS OF DESIGN FOR STAINED GLASS.

LECTURING before a meeting of the Society of Designers, held on Tuesday, and presided over by Mr. G. C. Haite, Mr. F. Hamilton Jackson dealt with the question of the essentials of design for stained glass. After an interesting historical retrospect of work in stained-glass, he gave a variety of hints based upon his long experience of the art. He pointed out, for example, that in a tall window the treatment of the top must be very different from that of the lower portion, as it was considerably further from the eye of the spectator; that in a large building much heavier leads and bolder work were needed than in a small one; and that the colouration of a window should be suited to its situation, that for a

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northern window being unsuitable for one which had a southern aspect.

Dealing with the treatment of design for stained glass, Mr. Jackson urged that the nature of the material must be considered and utilised, its beauty being developed and its special qualities used as the starting point of the treatment. The necessities of manufacture must be frankly recognised, and indeed, rather emphasised than slurred over in an attempt at concealment. Moderation in effect and a sane treatment of the subjects chosen was usually more pleasing in effect than the bizarre and extravagant or the attempt to overstep the line dividing pictorial design from that appropriate to stained glass.

Another point to which the lecturer directed attention was that any effect requiring the expression of tonal values was inappropriate in a window, only such things as were intelligible in silhouette being really admissible. Blacking-out added enormously to the brilliancy of a window. It was essential that if the subject stretched across several lights, each light should compose happily within its own limits while bearing its part in the general composition. Those qualities of design which were admirable when properly treated in mural paintings would generally commend themselves in a window, though it was permissible so to arrange the effect as to produce greater variety of colour. Finally the lecturer urged that it should be borne in mind that a design in stained glass was purely design in coloured light, and everything which obscured the brilliancy of the effect of the light so as to make the glass dull and dead was entirely out of place.

In the discussion which followed, the President said it was a matter for thankfulness that much of the stained glass work of the early Victorian period would not last; it was not only badly designed but badly executed, and would fall to pieces. Mr. Newman referred to the windows put into St. Paul's Cathedral as the most disastrous failures in stained-glass work executed in the present generation.

THE ALTERATIONS AT THE COVENT GARDEN OPERA HOUSE.

THE alterations at Covent Garden, which have been carried out from the designs and under the personal superintendence of Mr. Edwin O. Sachs, may be taken in three groups :—I. Structural Alterations for the Audience, II. Structural Alterations for the Management. III. Equipment of the Stage.

I. STRUCTURAL ALTERATIONS FOR THE AUDIENCE.

Regarding the alterations for the audience, these comprise the re-modelling of the exit and entrance arrangements of the stage and the formation of a special stalls corridor, so that the stalls, with their corridors, now form an independent whole, having their own conveniences, cloak rooms, etc., and do not, as formerly, have to encroach upon the accommodation of the pit-tier boxes or the entrances and exits of other parts of the house. Entering from the main vestibule, there are now two sets of swing doors into the stalls corridor. From this corridor there is a central entrance into the stalls, and one on either side (right and left). There are pass staircases from the other tiers to the stalls corridors, and a special extra exit to Floral Street.

In connection with the stalls alteration, the old-fashioned front and apron of the stage, which used to protrude into the auditorium, has been abolished, and the orchestra set closer to the curtain line. This will considerably affect the lighting arrangements of the stage and bring the "picture" more in accordance with modern ideas. It also leads to the arrangement of extra rows of stalls. Two new boxes have also been formed in place of the old entrance to the stalls from the pit box tier. A number of minor improvements have also been made in different parts of the house. The carriage approach from Bow Street has been improved by the formation of extra doors, so that two lines of cabs and carriages can now "set down" and "pick up."

II. STRUCTURAL ALTERATIONS FOR THE MANAGEMENT.

The structural alterations for the management, at the back of the house, comprise quite a number of important items: an entire re-modelling of the storage and wardrobe arrangements, as well as the equipment of new workshops. In the first place, the large property shop, which used to be over the auditorium, has been accommodated on a large additional floor, erected over the whole of the back wing of the building. This back wing has been re-modelled, and now contains fine suites of rehearsal rooms, both for solo artistes, for the chorus, and for the ballet, distributed on three floors, well lighted and aired, and equipped with all modern sanitary arrangements, an independent staircase, and an independent exit. The entire wardrobe, dressmaking, and tailoring department has been housed on the south side of the stage, in suites of rooms comprising three upper floors, having two independent staircases and inter-communication by means of a hydraulic lift. On the north side of the house a suite of one of the upper floors has been retained as an armoury, a second has been re-modelled for storage purposes, whilst a third now comprises a fine set of offices for the stage department. Here, again, an independent staircase connects the various floors, and inter-communication is also obtained by means of a new hydraulic lift.

Below stage level on either side of the house the various suites of rooms have been remodelled and modernised as far as possible, one suite next to the stage entrance, for instance, comprising the offices of the firemen, stage mechanist and electrician, all in close proximity to one another, and in close touch with the stage manager's offices, by the independent staircase just mentioned, and with the stage by a pass stairs on the other. Even the stage door has been re-modelled, inasmuch as the door-keeper's office now has a small waiting room; and an entirely separate entrance, with timekeeper's office, has been formed for the working staff, by which means the crowding of the stage door will be reduced. The back portion of the stage has been separated off from stage level downwards, with the view of forming a large scenery store built on fire-resisting lines, and equipped with all the necessary racks for holding the "cloths" used in the usual repertoire. Similarly, in the back wing, an old store, formerly known as the "Infirmary," has been enlarged and re-modelled, with the view of forming a "wing" store.

In spite of these two modernised storage arrangements, the accommodation for scenery at Covent Garden is still necessarily of a very limited character, compared with that of Continental houses, and must remain a source of constant anxiety and trouble to a management who produce an average repertoire of 25 operas in the short space of 11 weeks.

III. EQUIPMENT OF THE STAGE.

The great alteration of the stage comprised entire gutting from top to bottom, so that nothing of the old stage from "gridiron" to cellar remains, with a small exception of a couple of wood-fly galleries. Further the alteration comprised the entire unroofing of the stage, raising the structure by 20 ft., and re-roofing on modern lines. It likewise involved a considerable amount of excavation work, with a view of forming deep pits to take certain parts of the mechanism. An entirely new "gridiron" had to be constructed right across the stage; two "gridiron" galleries had to be constructed on either side, and a number of light connecting ways running across the stage, An entirely new stage, including all construction parts. had to be provided; together with a "mezzanine" floor. The opening of the stage towards the auditorium had to be equipped with a fire-resisting curtain (the largest in London), and a strong party wall built from stage level downwards into the cellar. In connection with this constructional work, the whole of the gridiron galleries, stage, and mezzanine had to be re-floored, and the entire cellar or superficial area of the stage concreted over.

The scene docks on either side of the stage had to be re-modelled; one of them, for instance, being equipped with a large scene door, with revolving shutters, measuring 28 ft. in height; another being provided with several floors to take planned scenery, such as rocks, groups, etc. The exit and entrance arrangements of the stage also had to be re-modelled in such a way as to allow of greater convenience, and for the greater safety of the employés in case of accident. In connection with the constructional alteration of the stage, an entirely new stage equipment had to be provided on modern lines, everything above

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stage being now worked on the Brandt patent counterweight system, and everything below the stage on Sachs' patent electrical bridge system.

Without entering into detail, the stage may now be described as comprising a series of six horizontal sections running parallel with the curtain line from front to back, each section being 8 ft. wide, and the whole being followed by a large back stage or rear stage. The first section contains nothing but a plain "carpet cut," and openings to take the old-fashioned "grave" trap, "star" trap, or other similar contrivances. The second and third sections comprise large bridges, which can be raised 6 ft. above the stage, or lowered 8 ft. below the stage, constructed in two levels, on the lower level of which appliances can be installed for the purposes of raising minor platforms above stage level, or sinking traps and the like. The fourth, fifth, and sixth sections comprise large bridges running right across the stage front, which can be raised 9 ft. above the stage, or lowered 8 ft. below. The back stage has no openings or mechanism, beyond certain trap doors to a scenery store and the necessary electrical mechanism for raising and lowering scenery for storage purposes. Between the various sections of the stage, long longitudinal flaps, 2 feet wide, have been formed, and these can be easily opened to allow scenery to be passed through below for transformation scenes and the like. Each section is equipped with what is termed a pair of chariots, to hold "wing" lights placed on so-called wing ladders. All the electrical bridges are worked from "mezzanine" level and from ordinary switch boards, and can be raised and lowered at various speeds, and take loads up to 2 tons. They can be moved without vibration or noise at a cost of about ½ for power on a full rise when loaded.

Above stage level, each section has its series of lines to take cloths, borders, etc. Each section has a batten, from which the electric battens are suspended, and each section has a large wooden lattice girder, from which heavy pieces of scenery can be suspended. There are, on the average, about 10 lines for ordinary battens, a girder batten, and a light batten to each section; besides these lines, there are the equipments of flying apparatus and the like, whilst in front there are, of course, the necessary lines for tableaux curtains, act-drops, and draperies. Everything that is suspended from above can be worked at stage level, or at either of the gallery levels, every scene being counterweighted to a nicety; and one man can easily handle any scene. No mechanical contrivance is required, and in practice quite a number of scenes can be rapidly changed in a minimum of time.

Throughout the structure and mechanism steel has been used, iron pullies, and wire cable; and the inflammable materials have been absolutely reduced to the flooring of the gridiron and galleries, and the hard wood flooring of the stage and mezzanine. In other words, an absolute minimum of inflammable material replaces what was almost a maximum; and, seeing that the electric light has been installed, the risk of an outbreak of fire or its spread has been materially reduced.

The arrangements for the electrical illumination of the stage had naturally to be re-modelled and elaborated to meet the altered circumstances, the whole of the plant installed some two years back, of course, being re-used. Similarly, the steam appliances, telephone, speaking-tube, and other minor technical installations to be found on a modern stage were re-modelled. The system of gas lighting was entirely abolished, and, similarly, the system of limelight for special effects.

THE CARRYING OUT OF THE WORK.

The work was most expeditiously carried out. The two principal problems, *i.e.*, that of raising the roof and that of gutting the stage, occupied respectively two and three months, both pieces of work having beaten English records for operations of their respective classes, and having run American records very closely. The circumstances were, of course, very peculiar, owing to lack of space and the enormous quantity of storage that had to be handled, and much of the work was of an exceptionally dangerous character and of considerable risk to the workmen employed. Nevertheless not a single accident, much less a fatal casualty occured; and this is again a record, and compares particularly favourably with the accident list of the Berlin Court Theatre, which, during certain similar alterations, comprised one killed and seventeen seriously injured.

As already stated the alterations were designed by Mr. Edwin O. Sachs, who was assisted by his chief assistant, Mr. Lister, Mr. Thomas Kissack acting as clerk of the works.

The general contractors were Messrs. Colls & Son (manager in charge, Mr. Collins; foreman, Mr. Dowse). The iron-work contractors for everything above stage level were Messrs. Lindsay, Neal & Co., Ltd.; whilst the entire complicated structural and mechanical iron-work below stage level, including the stage "bridges" and lifts, was by Messrs. Drew-Bear, Perks & Co. (manager in charge, Mr. Simco). The electrical power plant for the "under machinery" was provided by the Thames Ironwork Shipbuilding Co., Ltd., of Blackwall (manager in charge, Mr. Flood); whilst the whole of the elaborate counterweight mechanism above stage level was provided by the well-known Berlin stage mechanist and contractor, Mr. F. Brandt, who personally attended to the installation of his appliances in London. The fire-resisting curtain was by Messrs. Merryweather & Sons, Ltd., and the alterations in the auditorium by the Army and Navy Auxiliary Supply, Ltd. (manager in charge, Mr. Player).

A PIECE of sculpture, the gift of Princess Henry of Battenberg, and intended as a memorial of the late Major George Hilliard, has just been finished at Eton and sent out to South Africa. It consists of a broken column and moulded base of Aberdeen granite, 5 feet high, the shaft being adorned with a Latin cross upon which the initials "I.H.S." are carved. The dedicatory brass states that the memorial has been "Erected in grateful remembrance of the devoted care he rendered her husband by Beatrice, Princess Henry of Battenberg." The memorial was executed by Messrs. Fountain & Son from a design prepared by Mr. Nutt, clerk of the Works at Windsor Castle.

LATE ADVERTISEMENT.

SITUATIONS VACANT.

THE LONDON COUNTY COUNCIL are prepared to consider applications from Architectural Assistants and Quantity Surveyors Assistants to fill vacancies on the unestablished staff of the Architect's Department, commencing salaries ranging from one to four guineas per week. Candidates should be between the ages of eighteen and thirty-five, and will be required to submit satisfactory references as to capability and character.

Assistants having a special knowledge of steel construction, and of not more than 35 years of age, are also required upon conditions similar to those above specified, at salaries (according to ability) not exceeding four guineas per week.

Applications for forms may be made either personally or by letter addressed to "The Superintending Architect," London County Council, Spring Gardens, S.W.

NOTE.—All application forms duly filled up must be delivered not later than 10 o'clock a.m., on Friday, the 7th June, 1901. Personal canvassing of any member of the Council will be a disqualification.

G. L. GOMME,
Clerk of the Council.

County Hall, S.W.,
22nd May, 1901.

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The British Architect.

LONDON: FRIDAY, MAY 31, 1901.

THE LATE MR. J. M. BRYDON.

THE architectural world is distinctly the poorer by the death of Mr. J. M. Brydon, which we much regret to have to announce to-day. It will no doubt come as a sort of shock to the profession, who could have had no idea of his being seriously ill, so short was the final stage of his illness. It appears that for some time Mr. Brydon had suffered somewhat from an affection of the throat, which, however, occasioned no alarm in the minds of his family or friends, and did not seriously interfere with his work. But a sudden and serious development of grave symptoms occurred, and after a brief and painful period of suffering the end came on Saturday last. The funeral took place at Highgate Cemetery on Wednesday afternoon, and was attended by the following, amongst a goodly number of the deceased gentleman's professional *confreres*:—Mr. Wm. Emerson, President R.I.B.A., Professor Aitchison, R.A., Past President R.I.B.A., Sir Lawrence Alma Tadema, R.A., Sir John Taylor, Mr. W. J. Locke, Secretary R.I.B.A.; Messrs. Aston Webb, A.R.A., John Belcher, A.R.A., Leonard Stokes, T. W. Cutler, Ernest George, W. D. Caröe, F.S.A., T. W. Cutler, Edwin T. Hall, H. T. Hare, W. H. Seth-Smith, H. B. Wheatley, Assistant Secretary, Society of Arts, Dr. Rowand Anderson (Edinburgh), and Dr. Murray (British Museum).

Mr. Brydon's professional career has been an interesting one. He was born at Dunfermline in 1840, where he was educated. In 1856 he became a pupil in an architect's office in Liverpool, afterwards returning to Scotland, and working for a time in the offices of Mr. Bryce, of Edinburgh, and Mr. Campbell Douglas, of Glasgow. He then migrated to London, and entered the offices of Messrs. Norman Shaw & Nesfield. Next we find him in business on his own account, and doing as many another has done to keep things going, viz., designing for manufacturers, chiefly furniture. But he soon found his true vocation, and took up work as an architect in the direction of domestic work, which included the large alterations at the Château of Bouillon, near Besancon, which the famous artist, M. Jas. Tissot, kept as a country residence, and also "Lewins" in Kent.

It was not, however, in domestic work that Mr. Brydon's distinctive abilities as an architect became generally recognised. He was fortunate enough to secure the work of carrying out a number of public buildings in Chelsea, including the free public library, the polytechnic, and the additions to the town hall. These gave him the opportunity to display those special qualities which secured for him a reputation as an architect of conspicuous ability. In Bath also he did some excellent work in the new Guildhall, the Victorian Art Gallery, the Technical Schools, and the extension of the Pump-room. Then we have also amongst his other public buildings his Women's Hospital in Euston Road, admirably designed in red brick; the Hospital for Stone in Henrietta Street, Covent Garden, and the medical schools for women in Hunter Street. His last and greatest work, only just as it were begun, was the design for the new public offices for the Local Government Board and the Educational Department in Whitehall. Like the late Mr. William Young, who at the same time was appointed architect for the new War Office building, he has been removed by death just after the foundations have been completed, and before the actual work of erecting the superstructure has been commenced.

Amongst Mr. Brydon's works which have found illustration in the *British Architect* we might name the following:—Chelsea Vestry Hall (January 21st, 28th, and February 4th, 1887); West Kensington Congregational Church, in collaboration with Mr. James Cubitt (June 10th, 1887); Chelsea Free Public Library (May 9th, 1890, and January 8th and 15th, 1892); Chelsea Polytechnic (March 27th, 1891); Whitfield Tabernacle, second premiated design (December 5th and 19th, 1890); Bath Municipal Buildings (December 18th, 1896); Claverton Lodge (January 1st, 1897); and Bath Pump Room extension (March 4th, 1898).

As a member of the Royal Institute of British Architects, which he joined in 1881, Mr. Brydon was an able and energetic worker, and at the time of his death was a vice-president. In all his relations, business and personal, he was a man much liked, and he will be much missed by all who knew him.

As we have already said, the architectural world to-day is the poorer by Mr. Brydon's death. As an architect he was well equipped to help in the steady development of architecture on safe lines and sound principles, and with all one's desire to see a revival of interest and originality in the art, we must admit the necessity for wise restraint and the insistence of sound principles. With the publication of Mr. Brydon's design for the Government offices we gave up any lingering hope we had that he might institute some fresh departure in which simple dignity of general form might be allied to fresh interest of detailed treatment. His work on the city of Bath Council Chamber almost suggested the possibility of this, but his design for the Government buildings appeared even less free from well known precedents than Mr. Young's. But his prudence and restraint were all for the good in some ways, and he would never have done anything which he might live to regret in the way of triviality or experimentalism in architecture. His work in the Chelsea Town Hall and Free Library and in the City of Bath Municipal Buildings, Art Gallery, and Pump Room will be the things counting to his greatest credit. Bath indeed was especially fortunate in having so much new work from the hands of one who could so worthily carry on the dignified methods of the Messrs. Wood. It is a matter for deep regret that, having gone so far in the design of our new Government offices, he was unable to complete his task, for we are sure in the detailed treatment much excellent quality would have appeared, which could not be apparent from the general drawings.

Mr. Brydon was always ready to give his valuable advice to younger men, when, as often occurred, they sought it in the preparation of competition designs. He was a sound and discriminating critic and generous in appreciation of good work whether old or new. The affected *nil admirari* spirit of some moderns, which is so stupid a view and fatal to real progress, he had no taint of at all. He was himself hearty and thorough. We are convinced that a cheerful optimism and a generous appreciation of all good, wherever hailing from, counts far more surely for progress than a despairing and cavilling spirit in matters of art. Notwithstanding all one's disappointment and impatience with the poor condition and results of modern art it will find its best mitigation in a hopeful spirit, and in a hearty recognition of good whenever and wherever in appears. From what we knew of Mr. Brydon this was his own practical outlook, and one which is to be rightly commended as a wise and stimulating one.

QUESTIONS REQUIRING AN ANSWER BY LIGHTNING RESEARCH COMMITTEE.

THE Lightning Research Committee, whose appointment and proposed work was referred to in the *British Architect* of the 12th ult. (page 256 *ante*) have drawn up the following schedule of questions for the guidance of observers in sending particulars of damage to buildings caused by lightning stroke:—

1. Name of building struck, and for what purpose used. (A photograph taken after the disaster would be useful.)

2. Date and hour of occurrence; name of place and county.

3. Description and situation of the building, and height above sea level. (Give particulars as to its position with regard to other buildings and high trees, and its propinquity to any wells.)

4. Was rain falling when building was struck? If not, did rain precede or follow the stroke, and at what interval?

5. Was the building provided with lightning-rods? If so, state number, position, height above roof, material (both of rod and staples), shape, sectional area, how finished at top and at bottom, condition of ends after flash—*i.e.*, whether melted or blunted. (A sketch plan should be made, which should aim at being a sort of

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Röntgen-ray representation, the metal-work being shown a different shade from the brick and stone work.)

6. Was the conductor continuous? Describe the earth-connection. When was the conductor last examined and tested?

7. Nature of soil.

8. State fully the effect on the building; if any portion was set on fire; also if any damage occurred to metal-work, such as bells, rain-water, and other pipes, electric bells, or telephones, etc.

9. State distance (vertical and horizontal) of any portion of the building affected by the lightning from the nearest point of the conductor. (If stones, etc., were displaced, state to what distance.)

10. State materials of roof coverings, and position of gutters and down-pipes. Was the conductor in contact with any other metal?

11. Were there any metal cresting, weather-cocks, finials, or flagstaffs? If so, state distance from and height above conductor.

12. If the conductor was struck, state whether the damaged portions can be obtained for examination.

THE ENGINEER OR ARCHITECT AS ARBITRATOR.

By CHAS. E. GRITTON, A.M.Inst.C.E.

AN exceedingly valuable book, under the title of "The Engineer or Architect as Arbitrator between the Employer and the Contractor, and his other functions under Building Contracts," by Charles Currie Gregory, M.Canadian Soc.C.E., A.M.Inst.C.E., Barrister-at-Law, of Osgoode Hall, and of the Bar of Nova Scotia, has just been published by Messrs. Wm. Clowes & Sons, Limited.

Mr. Gregory in his preface says:—"An appreciation of the difficulty which the lawyer and the engineer or architect frequently experience in readily and fully understanding each other when called upon to co-operate in the litigation of claims under building contracts has led the author to believe that a text-book dealing with the functions of the engineer or architect, and the circumstances under which the necessity for the discharge of such functions actually arises in practice, would be a valuable addition to the library of a gentleman of either of those professions."

The work goes far to enable the engineer or architect to understand the principles of law applicable to the discharge of his functions, and, writing as a layman in legal matters, I believe also, to enable the lawyer to realise the position in which the engineer or architect is placed, and the purposes which he is to accomplish by his acts, and the matters which he is to take into consideration in making his determinations.

The author, having been engaged for more than 20 years in engineering, and, subsequently, for almost as long, as a barrister, in litigation in connection with railway and canal construction, and as an arbitrator or referee in such cases, has, indeed, unusual qualifications for making contribution of a practical character to the common store of knowledge pertaining to such subjects. Such useful contribution this book affords. More than 100 cases are quoted, and it is a veritable mine of information on the subject.

I quote one or two striking passages:—"The right to payment for the performance of work is purely a matter of contract. There is no law that a man shall be paid for his work and labour." "In making a contract, the minds of the several parties to it must meet in a common intention." "Trading corporations, having gain for their object, may become bound in implied contracts which are necessary for, and incidental to, the purposes for which they are created, and of which they have taken the benefit."

Chapter I. deals with the position in which the engineer or architect stands towards the parties respectively. Chapter II. takes a general view of the functions of the engineer or architect under building contracts.

The remaining six chapters treat of the functions of the engineer or architect in the fulfilment of the contract, classified as follows:—(*a*) Functions of definition of the work required to be performed. (*b*) Of approval of work after it has been performed. (*c*) For the enforcement of diligence on the part of the contractor, and to afford the employer a means, by his own act, or by the act of his agent, to avoid sustaining injury through a delay in the completion of the work. (*d*) Of ascertaining and certifying the amounts payable to the contractor. (*e*) Of arbitration between the parties. And last, but by no means least in importance, Extras, which like the poor, are always with us, for our sins!

Messrs. Clowes & Sons are to be congratulated on this latest addition to their unique library of law books.

NOTES ON CURRENT EVENTS.

WE regret to have missed the very interesting exhibition of oils, pastels, and drawings by M. Léon Shermitte, at Messrs. Boussod, Valadon & Co.'s, of 5, Regent Street. The few examples remaining out of this loan collection when we visited it were proof enough of the fine character of this distinguished artist's work. In masterly technique he displays the artistic charms of the simplest subjects in a most delightful manner. We know of few works we would so soon have for permanent companions. In definite colour value, and in atmospheric charm this artist never fails to command attention.

THE 146 designs for the new Public Library at Keighley (for which Mr. Andrew Carnegie has given £10,000), have now been examined by Mr. Leonard Stokes, who awards the premiums as follows:—1st (£50), Messrs. Arthur McKewan and James A. Swan, of Newhall Street, Birmingham; 2nd (£30), Mr. G. S. Gibson, 4, Gray's Inn Square, London; 3rd (£20), Mr. T. Davidson, Great Ormond Street, London. The Free Library Committee recommend that the premium for the first set shall not be merged in the architects' commission, for which sensible recommendation the committee have our thanks.

THE Penzance Town Council at their meeting on the 23rd inst., adopted the recommendation of the Pleasure Grounds Committee, that advertisements should be issued inviting competitive plans for laying-out the field at the Promenade, to include a pavilion suitable for band concerts, and that a premium of £21 be offered for the one selected, and £10 10s. for the next best, the total cost not to exceed £7,000.

MR. WILLIAM JEFFERY HOPKINS, the well-known architect and antiquarian, of Worcester, died on Tuesday, at the advanced age of 80 years. For many years he held the position of consulting architect to the Diocesan Church Extension Society, and was himself responsible for plans for much important Church work in the diocese. He was an active member of the Diocesan Architectural and Archæological Society, and a prominent chess player. He was a brother of the well-known hop grower and merchant, Mr. T. M. Hopkins, and was held in high esteem in professional and private circles.

SIR MARTIN CONWAY has been appointed Slade Professor of Art at Cambridge. Sir Martin is, perhaps, chiefly known to the public as a climber and a politician, but he was Art Professor at Liverpool University before he took to climbing and politics. He is one of those men who seem to be able to do most things. For he is a writer, an engraver, a photographer and an accomplished speaker. And now for the second time in his life he finds himself a Professor of Art.

MR. ORLANDO NORIE, a water colour artist of considerable ability, who was on many occasions employed by Queen Victoria to record military and other pageants, has died at Dunkirk. A picture he painted for Her Majesty, in which was the figure of John Brown, was returned, accompanied by a letter written and signed by the Queen, in which she said, "John Brown never wore a hat like that."

THE private view of Mr. and Mrs. Albert Stevens' water-colours, under the title of "Gardens at Home and Abroad," and "Sunshine and Shadow in Foreign Lands," will take place on Saturday week, the 8th prox. at the

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Modern Gallery, 175, Bond Street. Mr. Alexander Williams, R.H.A., is also holding a further exhibition of cabinet oil paintings of "Picturesque Ireland," at the same gallery, and opening on the same date.

THE new art movement is a wonderful thing. For some of its oddest expressions our readers should consult the current issue of the *Studio*. Such terrible nightmares will never, it is to be hoped, become current in England.

"ARTISTS' STUDIOS" is the title of a series of interesting articles beginning in the June number of the *Magazine of Art*, by Walter J. Goodman.

RESPECTING the domination of Mr. Sargent's works at the Royal Academy Exhibition, the Toronto *Globe* remarks as follows:—"The Royal Academy contains two great and six minor Sargents, and 1,875 miscellaneous works!" The "1,875 miscellaneous works" is good!

SOME important pictures were disposed of by Messrs. Robinson & Fisher at Willis's Rooms on the 23rd inst. The chief lots were:—By Hobbema, "Rural Village Scene," (in 1832 this picture realised 270 guineas), 2,250 guineas; B. W. Leader, "Sand Dunes," 700 guineas; G. Romney, "Miss Farren (Countess of Derby)," 650 guineas; T. Gainsborough, "The Hon. Mrs. Hamilton," 600 guineas; Sir H. Raeburn, "Rt. Hon. Wm. Adam," 600 guineas; J. Ruysdael, "Landscape and Figures," 495 guineas; C. Crevelli, "Madonna, Child and Saints," 240 guineas.

THE statement made last week that the trustees of the Chantrey Bequest had for the first time bought a woman's picture is not accurate. So long ago as 1897 the trustees of the Chantrey Bequest purchased a work entitled "Colt Hunting in the New Forest," No. 1,649, by Miss L. E. Kemp-Welch. In the same galleries will be found two other works by lady artists, both purchased by the trustees of the Chantrey Bequest: No. 1,578, "Love Locked Out," by Anna Lea Merritt (purchased in 1890), and No. 59, "Morning Bath," by Mildred A. Butler (purchased in 1896).

AN amateur picture connoisseur, has, it is said, just purchased from a pawnshop, at Leyton, an oil painting for a sovereign which may prove a most valuable work of art. On arriving home with his purchase the first thing he discovered was a cutting from an old catalogue, which had been stuck on the stretchers, and which was: "Ditto, View near Tivoli, Rome in the distance (engraved), Wilson." On investigation his purchase is believed to be the work of one Richard Wilson. There are several of Wilson's paintings in the National Gallery, and curiously enough, the latest acquisition which was bequeathed to the nation by Mr. Ashbee is in a frame precisely similar to that discovered by the lucky purchaser above mentioned. One of Wilson's pictures ("View of Rome") was sold at the Duke of Hamilton's sale for £1,050.

THE King has consented to become patron of the Berkshire Archæological Society.

THE Carpenters' Company's exhibition of woodwork opens on the 5th prox., the judging for which has already been begun. Associated with the judging is Mr. George Frampton, A.R.A. The exhibits will be classed under the heads of constructive carpentry, ornamental carpentry, joinery, and hand-carving.

"QUANTITIES: ROAD-MAKING AND SEWER CONSTRUCTION" is the title of a volume by Mr. J. Bartlett, M.S.A. (London: The St. Bride's Press, Limited), designed chiefly to provide a concise and ready reference to the numerous items that occur in the practice of a municipal and county surveyor's office and their method of measurement. Specimen forms of tender and specifications from actual work are given, as also a number of tables of useful information.

A USEFUL little handbook is the "Practical Draughtsmen's Work" (London: Cassell & Company, Limited). It is edited by Mr. Paul N. Hasluck, containing much concise information on the general principles and practice of drawing. The volume consists substantially of several series of illustrated articles by Prof. Henry Adams, which have appeared in a contemporary.

WHEN the block of buildings in which the Foreign Office and the Colonial Office are housed was erected the commencement of an arch was left in the rough at that portion of the Foreign Office which faces No. 10, Downing Street. This clearly indicates that Sir Gilbert Scott's original plans were prepared in the belief that before long the residences in Downing Street occupied by the First Lord of the Treasury and the Chancellor of the Exchequer would be pulled down and replaced by a structure or structures of more commanding character. It having now been finally decided, however, that the historical apartments so long occupied by Mr. Gladstone shall remain intact, the Downing Street front being masked and the park front being encased in stone so as to harmonise with the old Treasury buildings, it is obvious that Sir Gilbert Scott's scheme will not be carried further; and I hear, says the London correspondent of the *Manchester Guardian*, that during the forthcoming recess, if not sooner, steps will be taken to remove from the Foreign Office wall the projecting stonework from which the arch was to have sprung.

WHAT is known as the Buxton Memorial Fountain at the top of Great George Street, which was designed and erected by Mr. Charles Buxton, M.P., has been offered by his son, Mr. Sydney Buxton, M.P., to the Westminster City Council. This body has accepted the offer, and is willing to maintain the fountain in perpetuity provided that it is placed in good repair before it is finally entrusted to their keeping. The fountain, it may be remembered, was built in 1865, but most of the beautiful colouring work has gone, and one if not more of the metal plates surrounding the basin, upon which the circumstances of its erection were set forth, have been ruthlessly torn away. The inscription indicated that it was intended as a memorial of those members of Parliament who, with Mr. Wilberforce, advocated the abolition of the British slave trade, which was achieved in 1807; and also of those members who, with Sir T. Fowell Buxton, brought about the emancipation of the slave throughout the British dominions in 1834.

THE impending demolition of the curious little shop in Portugal Street, often pointed out as the veritable Old Curiosity Shop of Charles Dickens, revives interest in the much-debated question as to whether its pretensions in this respect are valid. Curiously enough, remarks the *Daily Chronicle*, Dickens himself would appear to be the chief witness against the claims of the house. Not that his description of the old curiosity shop does not fit in with that by Lincoln's Inn. It does—to a certain extent. Thus, in Chapter I. of "The Old Curiosity Shop" he describes the home of Little Nell as being "one of those receptacles for old and curious things, which seem to crouch in odd corners in this town." That would suit the Portugal Street little house "down to the ground." But elsewhere in the succeeding chapters there is plenty of internal evidence that the novelist must have had a much larger house, containing passages, in his mind's eye when picturing his old curiosity shop. Dickens himself is said to have pointed to the old curiosity shop which stood by Leicester Square until some years ago as the real home of Little Nell.

AN important addition to the recent discoveries of Roman remains at Dorchester, Dorset, has just been made. While some workmen were making excavations for a house in the road known as Icen Way, in the eastern suburbs of the town, they came upon a Roman floor more than 20 ft. long, and about 7 ft. wide. So far as it is at present disclosed, the design is not so ornate as that of the pavement which has just been deposited in the county museum, but it is, nevertheless, a discovery of great antiquarian interest.

THE newly-appointed Permanent Secretary to the Board of Trade is Mr. Francis J. S. Hopwood, C.B., C.M.G. Mr. Hopwood has acted as secretary to the Railway

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Department since 1893. In that department he has been especially connected with legislation for the promotion of light railways, the development of electric traction, the prevention of accidents to railway servants, and the regulation of their hours of labour.

Is Sherwood Forest to be given over to mining developments? It is announced that the Duke of Newcastle has leased 30,000 acres of land to the Wigan Coal and Iron Company. This includes some of the most charming portions of the ancient forest of Sherwood. Fears have been entertained that this will necessitate the felling of some of the most famous parts of the forest, including many of the alleged haunts of Robin Hood, the outlaw; but it is satisfactory to learn that the Duke, although leasing the land for mining purposes, will not allow any disfigurement of the surface land of the forest proper.

THE whole of the sum of £66,800 required for the purchase of the additional 43 acres to Brockwell Park has now been promised. Mr. Albert Larking, the hon. secretary of the committee charged with the onerous work of securing this most desirable consummation, in making this pleasing announcement, adds:—"For rescuing this beautifully wooded land from the hands of the enterprising jerry builders we are indebted to the London County Council, the municipal bodies of Lambeth, Camberwell, Newington, St. George the Martyr, and Southwark, the Ecclesiastical Commissioners, the London parochial charities, the Peabody Donation Fund, the Commons and Footpaths Preservation Society, Mr. H. C. Gooch, and the Skinners', Goldsmiths', Merchant Taylors', Drapers', and Armourers' Companies. Also to many generous donors towards the necessary working expenses."

A COMPLETE installation of Marconi's wireless telegraphy specially suitable for signalling purposes as used in the Navy has been fitted on board the Elder, Dempster Beaver liner *Lake Champlain*. This installation is the first which has been fitted on any of the Atlantic liners sailing from Liverpool. The *Lake Champlain* left the Mersey for Halifax last Tuesday with over 1,000 passengers, and arrangements were made to establish communication between the vessel and the Marconi wireless telegraph station at Holyhead. At 9.37 p.m., when off the Skerries, contact was obtained with the Holyhead station, the vessel being then 13 miles distant. Constant communication with the station was continued until 1 a.m., the vessel being then 37 miles distant. Communication was established with the Marconi station at Rosslare, and at 4.30 a.m. a fresh batch of telegrams was forwarded, notifying the vessel's arrival off the Tuskar Light to the owners, Messrs. Elder, Dempster and Co. The position of the ship was 19 miles from Rosslare telegraph station. The last telegram was forwarded at 7.30 a.m., at a distance of nearly 30 miles from Rosslare.

SUGGESTED SITES FOR THE LIVERPOOL CATHEDRAL.

A MEMORANDUM has been drawn up by Mr. George Bradbury, diocesan surveyor of Liverpool, relative to the question of a suitable site for the proposed cathedral, for the information of the diocesan authorities.

In selecting a site for the new cathedral, Mr. Bradbury thinks the following points should be carefully considered:—

"1. That it should be placed upon a site a little apart, away from the noise, dirt, and bustle of the heavy traffic of the Liverpool streets.

"2. That it should be as near the centre of the city, between north and south, as possible. The north of Liverpool I take as the boundary of Bootle, and the south including the whole of Garston, for whether that district is incorporated with Liverpool or not, it is really part of the city, and very extensive building operations are going on there.

"3. If a portion of the cathedral is to be built within the next 20 years, the question of the cost of the site is a most important one. If the committee have to spend £150,000 to £200,000 in purchasing buildings, then all the money at present subscribed and for the next few years would probably be expended without the laying of a single stone.

"4. The question of foundations. The cathedral should be built on the rock, so as to properly sustain the high towers or spires, and avoid the disasters that have befallen so many of our ancient cathedrals by the towers and spires falling and destroying large portions of the transepts and naves. The cost of foundations in the lower parts of the city would be something enormous.

"5. The question of architectural effect, and as this is one upon which there may be great difference of opinion, I do not think I can do better than quote from the highest possible authority. Mr. Ruskin, on the subject of building on sloping ground, says—'The fact is that the apprehension of the size of the natural objects, as well as of architecture, depends more on fortunate excitement of the imagination than on measurements by the eye, and the architect has a peculiar advantage in being able to press close upon the sight such magnitude as he can command. There are few rocks even among the Alps that have a clear vertical fall as high as the choir of Beauvais, and if we secure a good precipice of wall or a sheer and unbroken flank of tower, and place them where there are no enormous natural features to oppose them, we shall feel in them no want of sublimity of size.'"

Three possible sites have been more or less prominently put forward as suitable for the cathedral, viz.:—St. Luke's, Bold Street; Monument Place, London Road; and St. James's Mount, Upper Duke Street. Mr. Bradbury discusses each of these suggested sites in detail. St. Luke's site he considers an impossibly costly one, and anything but quiet, whilst he further thinks it would be a pity to remove a church which cost over £60,000 to build, and has a fine architectural effect. The Monument Place site is also, in his opinion, costly, noisy, and otherwise unsuitable.

The site favoured by Mr. Bradbury is that of St. James's Mount. "St. James's Mount is in itself," he says, "sufficiently large to admit of a cathedral without even disturbing the boundary railing of the cemetery or the mortuary chapel, nor need a single grave or stone be disturbed. The dimensions across the site at its widest part are, as given by Mr. Robert Gladstone, about 248 ft., and the length 1,020 ft." Moreover the site would be away from the noise, dirt, and bustle of the heavy Liverpool traffic, and surrounded by light and air on all sides. It would also be very near the centre of the city, with a convenient access to the main tram routes. The cost of acquiring this site, which Mr. Bradbury puts at some £20,000, compares most favourably with that of the other sites, which in the case of the St. Luke's site he estimates at £130,000, and in that of the Monument Place site at £180,000. As regards the foundations of the St. James's Mount site, Mr. Bradbury says that, from a careful survey he has made, he is of opinion the original rock would be found at a reasonable depth below the surface. He believes the cost of the foundations of this site would probably be far less than of any other site in Liverpool. "The walls would stand upon the solid undisturbed rock, and in this way there would be no danger of any accident in the future."

The question of architectural effect Mr. Bradbury evidently considers to be more fully met and satisfied in the St. James's Mount site than in the case of any other site that has come to his notice. He thinks it would quite equal, if it did not surpass, anything we have in England. He concludes:—"The cathedral would probably stand on a perfectly level platform about 13 ft. above St. James's Road at its north end. The nave floor would therefore be about 150 ft. above the level of high-water mark, and about the same level as Hope Street, facing Gambier Terrace. The view of the cathedral for the whole length of that part of Hope Street, viewed across the pretty hollow of the cemetery, would be something almost unique in England, and of great magnificence. It would stand in an open space nearly a quarter of a mile long by 200 yards wide. The St. James's Mount site is, in my idea, the only one in the whole of Liverpool that meets the conditions of a Liverpool Cathedral."

THE Berwick Town Council have decided to erect a stone hospital for infectious diseases, at a cost of £5,500.

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NEW BUILDING PROJECTS AT CAMBRIDGE UNIVERSITY.

THREE important proposals for new buildings are at present before the University, says the University correspondent of the *Manchester Guardian*. The Library Syndicate have put forward a plan for obtaining a much-needed addition to the University Library by means of roofing in its eastern quadrangle with glass. The room thus formed would be fitted both for storing books and as a reading-room. The plan includes a provision to glaze the open arches of the colonnade or cloister of the façade of the library in order to enlarge the entrance. The cost is estimated not to exceed £6,500. Considerable opposition is being raised against the scheme, which was discussed at a meeting of members of the Senate on Saturday. While the urgent need of additional space in the library is admitted, it is contended that this would be obtained at too great a cost by a plan which destroys the character both of the classical front of the building and of the picturesque Gothic court within; while a considerable amount of fresh space will soon be acquired by the addition to the library of the Woodwardian Museum, from which the geological collection will be transferred to the new Sedgwick Memorial Museum, now rapidly rising in Downing Street.

Another recommendation comes from the syndicate appointed to superintend the erection of the proposed law school and law library. For the latter a sum of £15,000 was left to the University by the late Miss R. F. Squire. A portion of the Downing Street site has been assigned for this purpose, the scheme including an entrance gateway and porter's lodge for the whole of the site. Plans have been prepared by Mr. T. G. Jackson, R.A., the cost of the school, lodge, and gateway being estimated at £7,000. The syndicate recommend that contracts be made for the work to begin in the long vacation.

The third report is on the buildings for University purposes which it is proposed to erect on the Mortlock site. These buildings are to include six lecture-rooms, examination-rooms for five or six hundred candidates, a library, two common-rooms for professors and lecturers, and an office for the Schools Examination Board. Plans have been prepared by Mr. E. S. Prior for a building of the grey local brick, with Ancaster stone dressings, and a stone frontage on Free School Lane, at an estimated cost of £18,300. The syndicate in charge of the scheme point out that the buildings will save the University £500 a year now spent on the hire and preparation of rooms for examinations, but, in view of the limited funds at present available for building, they merely recommend that a general approval be given to the plans.

DEVON AND EXETER ARCHITECTURAL SOCIETY.

THE 5th annual meeting of the Three Towns Branch of the Devon and Exeter Architectural Society was held last week, at Plymouth, the president of the branch (Mr. Henry George Luff, A.R.I.B.A.) occupying the chair.

Mr. Shires, presenting the report, stated that during the year the library has been fairly started, under the management of Mr. W. H. May, and already good use has been made of it. A list of books in the library, together with a copy of the rules, has been sent out to each member. During the past year the society has been materially strengthened by the accession of new members, as follows:—1 honorary member, 3 members, 3 associate members, and 5 associates—in all 12; whilst, on the other hand, your council regret to have to place on record the decease of one of our members, Mr. Chastel de Boinville, the result of an unfortunate accident. Efforts were made by your council to dine together as last year, but owing to the small response the function was abandoned. Your council take this opportunity of expressing a hope that more lectures will be forthcoming during the winter session, and it is also hoped that further contributions will be made to the library. Mr. Shires also presented the financial statements, which, after making a liberal allowance to the society's library, showed a good balance in favour of the society.

The reports having been adopted, the election of officers to serve on the council resulted as follows:—Chairman, Mr. Charles King; committee, Messrs. Parker, E. Coath Adams, W. H. May, M. A. Bazeley, and A. E. Lethbridge; honorary secretary and treasurer, Mr. B. Priestley Shires; librarian, Mr. W. H. May. Mr. Luff was heartily thanked for his services as chairman of the branch during the past two years.

In a discussion that followed it was maintained that architectural work in connection with the public bodies of the town should be more evenly distributed.

OUR ILLUSTRATIONS.

HOUSE AT BANSTEAD: HOUSE AT CROYDON: A WAYSIDE INN.

GEO. A. JOHNSON, ARCHITECT.

MR. JOHNSON has a good appreciation of the picturesque treatment of country buildings. One has only to look back to what was done 50 years ago to realise how much these examples excel that work in simple picturesque quality. The Banstead House is suggestive in plan in its adoption of the large living room in place of two cramped ones, and the good hall-place. The plan of a Wayside Inn has also some good points.

HOTEL DE LA BOURSE, CAEN.

This splendid example of French Renaissance is very sympathetically delineated by Mr. I. A. Forbes-Smith and forms one of the series for the Pugin Studentship.

OPENING OF THE NAVE OF THE CRYPT OF ST. JOHN'S, CLERKENWELL.

THE nave of the ancient crypt of the Priory Church of St. John at Clerkenwell was opened on the 21st inst. for parochial purposes by Earl Egerton of Tatton, Chancellor of the Order of the Hospital of St. John of Jerusalem in England. The crypt is of great antiquity, having been erected by the Knights of the Order of St. John about the year 1100. This was the original chapel, and consists of five bays, with side aisles or chapels to the eastern part, that on the north side being of one bay only, and that on the south of three bays. There are chambers of minor importance on the north side, westward of the aisle. In the latter part of the 12th century, about the year 1175, the erection of a grand priory church having been determined on, the original chapel, with the extension then made to the eastward, became a crypt under the choir of the new church. This church was consecrated by the Latin Patriarch of Jerusalem, Heraclius, in the year 1185.

After the opening service in the church, the congregation proceeded to the crypt, which was beautifully illuminated by electric light, and Lord Egerton of Tatton having taken the chair, the rector gave some further archæological information connected with the church, after which the chairman declared the crypt open. In doing so he said that that building had been restored at a cost of £800, of which £200 had been given by the Ecclesiastical Commissioners, the rest of the sum being defrayed by contributions from various sources. They were now very anxious to restore the remaining portions of the building, and the Ecclesiastical Commissioners had promised £200 towards that restoration. Another £100 had been already promised, and £500 was still required. He trusted that those who valued buildings of architectural value would come forward to help them in rendering that ancient building available for parochial purposes.

THE contract for the erection of the new Royal Infirmary at Newcastle-on-Tyne was let on the 24th inst. to Mr. Samuel Warburton, of Miles Platting, Manchester, whose tender is close upon £195,000.

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THE SCOTTISH NATIONAL AND OTHER GALLERIES.

THE annual report for the year ended September 30, 1900, of the Commissioners and Trustees of the Board of Manufactures in Scotland as to their proceedings in regard to the National Gallery, School of Art, Museum of Antiquities, and other buildings and establishments under their charge, has just been issued. To the Scottish National Gallery the following works of art have been added during the year:—Portrait of Mr. Andrew Plimer, miniature painter, by A. Geddes, A.R.A.; portrait of Mr. Alexander Bonar, of Ratho, and of Mrs. Bonar, both by Sir Henry Raeburn, presented by Miss S. A. Fleming; and portrait of Mrs. Douglas Dickson, by A. Geddes, A.R.A., bequeated by Sir Douglas Maclagan. To the Scottish National Portrait Gallery, among other works, there have been added during the year a miniature of Viscount Dundee, by an unknown artist, presented by Mr. A. Sholto Douglas; a portrait of King James I. of Scotland, by an unknown artist; a portrait of King James V., by an unknown artist, both from the Watson collection; a portrait of Dr. Chalmers, by Kenneth McLeay, presented by Sir T. D. Gibson Carmichael, a portrait of Sir John Anstruther, pen drawing by George Dance, R.A.; and a plaster bust of Prince Charles Edward Stuart, by J. B. Lemoyne. The portrait of Alexander Pope, by Jonathan Richardson, has been deposited on permanent loan by the Trustees of the National Portrait Gallery, London. During the year decorative portrait statues of Sir Henry Raeburn, James Hutton, Sir David Lindsay, Gavin Douglas, and Lord James Douglas have been placed in niches on the exterior of the National Portrait Gallery buildings. The total admissions to the National Gallery during the year were 72,581; to the statue gallery of the Royal Institution, 37,424; to the National Portrait Gallery buildings, 19,828; and to Dunblane Cathedral, 5,204. The number of objects of antiquity added to the Museum of Antiquities was 589 by donation, and 397 by purchase, while 296 volumes of books and pamphlets have been added to the library by donation and 18 by purchase.

THE TINTORETTO PICTURES AT VENICE.

ACCORDING to the *Gazzetta degli Artisti*, a Venetian newspaper, it is intended to "restore" the famous series of pictures by Tintoretto in the Scuola di San Rocco, and that the project is being discussed, attacked, and defended with the passion that is frequently imported into these questions in Italy.

A meeting of artists and critics has been held, under the presidency of Signor Molmenti, the well-known writer on art, and, after an examination of the present state of the pictures, it was there decided, on the initiative of Signor Bressanin, painter, and Professor Cantalamessa, director of the gallery of the Accademia, that it was desirable to reline and carefully to restore and to revarnish the pictures, the meeting pledging itself that such restoration should be of a conservative character. The report of these proceedings is followed by a letter signed by Dr. Frattin, who bears the title of "Guardian Grande" of the confraternity of San Rocco, pointing out what the confraternity has already done and what are the difficulties in the way of the course proposed. To this the *Gazzetta* adds a somewhat angry reply, committing itself definitely to the view of the artists, that the pictures—which have certainly darkened very greatly with time—should be restored.

It is of course difficult, remarks a *Times* correspondent, for any one not on the spot to pronounce an opinion as to whether the hazardous course proposed should be undertaken, but that it is hazardous there can be no manner of doubt. These very large pictures, some fifty in number are among the most precious in the world, and their preservation interests not Venice only but the educated world at large. We can only beg the authorities at Venice to proceed with the greatest caution, and to rid themselves altogether of that party feeling in the matter which, the *Gazzetta* declares, is warmly asserting itself. Dr. Frattin makes one suggestion that commends itself to commonsense: it is that the authorities should wait until the pictures have been examined by Professor Cavenaghi, of Milan, a practical picture restorer who, by the common consent of experts all over the world, has a better understanding of the way to treat Italian pictures than any other Italian. It would probably be well to abide by Signor Cavenaghi's opinion, and to leave it to him to say whether the cleaning of these masterpieces could be safely undertaken.

THE CITY AND GUILDS OF LONDON INSTITUTE.

THE annual report of the City and Guilds of London Institute, which has just been issued, refers to the recent incorporation of the Institute by Royal charter, and states that the general constitution remains the same. On the subject of co-ordinating the work of the technological examinations department of the Institute with the proposed branch of the Board of Education dealing with technology, the Council hope that arrangements will be made for the more intimate association of the work of the two bodies by which the overlapping of examinations may be avoided, and by which the instruction provided by County Councils and technical schools may be brought into closer relationship with the Board of Education and the Institute. The number of students attending the Central Technical College during the last session was 281. In no previous year since the opening of the college in 1885 has the number been so large. Of the total 115 took the civil and mechanical engineering course, 95 the electrical engineering course, 24 the chemical course, and 47 special courses.

Professor Armstrong, the dean of the Central Technical College, who wishes to obtain a larger and sounder treatment of the teaching of science in secondary schools, makes some observations on several matters of general educational interest affecting the Central College. They are, the Council's report says, the result of his observations on students coming direct from such schools during the two years he held the office of dean, and the Council add with regard to them:—"The imposition of a matriculation examination to the Institute's college has without doubt been the means of effecting some improvement in the curricula and methods of instruction in science in the schools from which most of the students are drawn, but the Central Technical College is the only college of the University in London which imposes such an entrance test for engineering, and unless and until the University is prepared to adapt its matriculation to suit the requirements of particular classes of students, which it is empowered to do under the new statutes, and especially to engineering students, no very general or substantial improvement can be expected."

With reference to the Technical College, Finsbury, the report states that there was during the year a satisfactory increase in the number of day students, but it was entirely due to an unusual increase in those taking the electrical course. There was a slight falling off in both the mechanical and chemical departments. "The rapid development of electric traction in this country during the past two or three years has no doubt attracted an increasing number of students to the electrical departments, and very possibly at the expense of the others." The number of day students was 200, as against 180 in 1898-99, and of these 101 took the electrical course. The evening department was attended by 639, as against 650 in the preceding session. There was also a small increase in the number of students at the South London Technical Art School, and the work done "continues to be of an earnest, satisfactory kind." As to the important work of the Institute's technological examinations department, the report says that there has been a further growth. The number of classes in technology registered last year by the Institute was 2,182, with 34,189 students. The gross expenditure of the Institute for 1900 was £33,069, and the net cost, after deducting students' fees, was £21,319.

THE Hull Corporation Property Committee have unanimously adopted the city architect's scheme for the formation of a city square and the building of a public hall. The cost is estimated at about £92,000.

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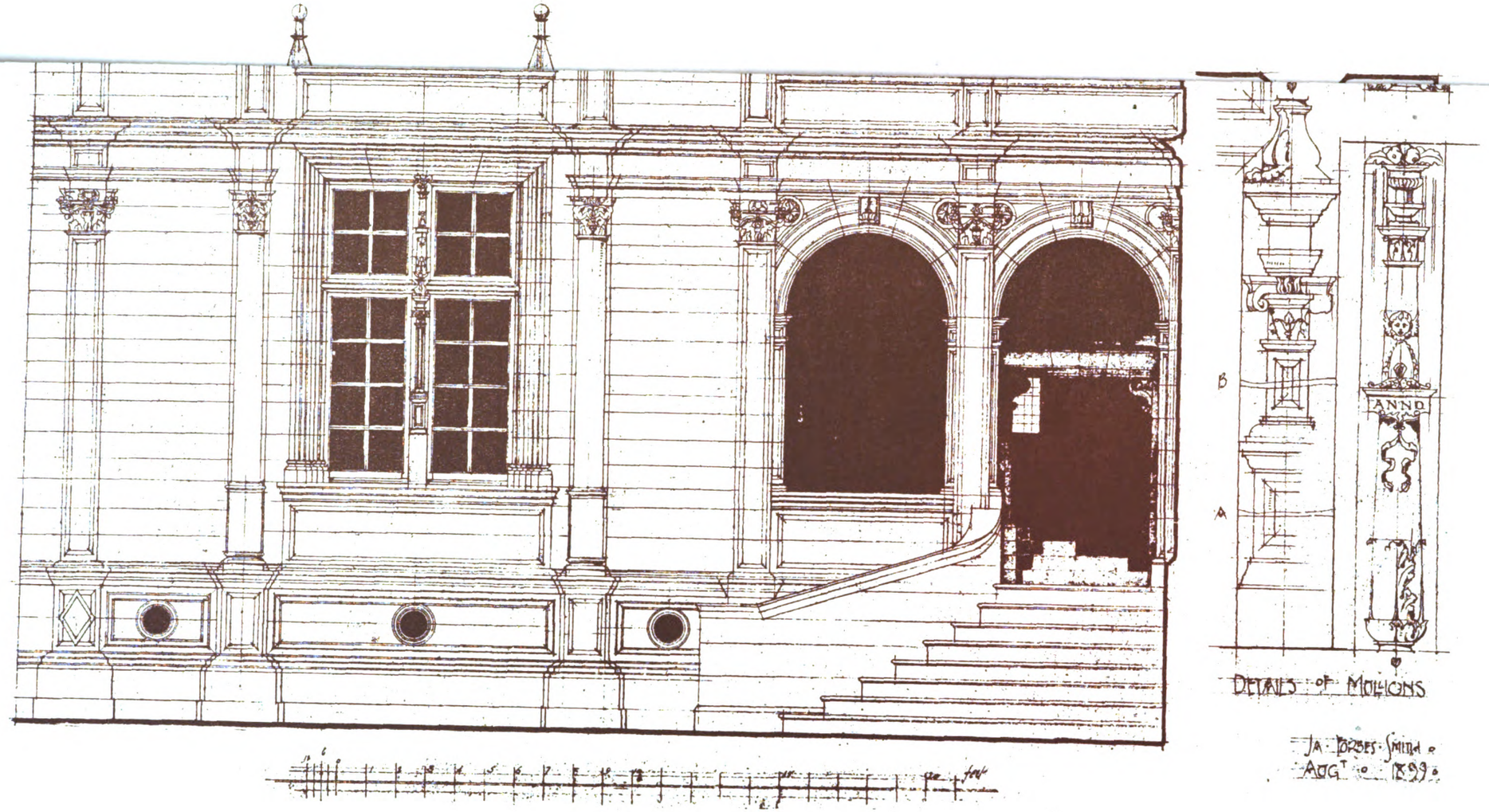

PUGIN STUDENTSHIP MEDAL OF MERIT.
AWARDED TO J.A. FORBES SMITH.

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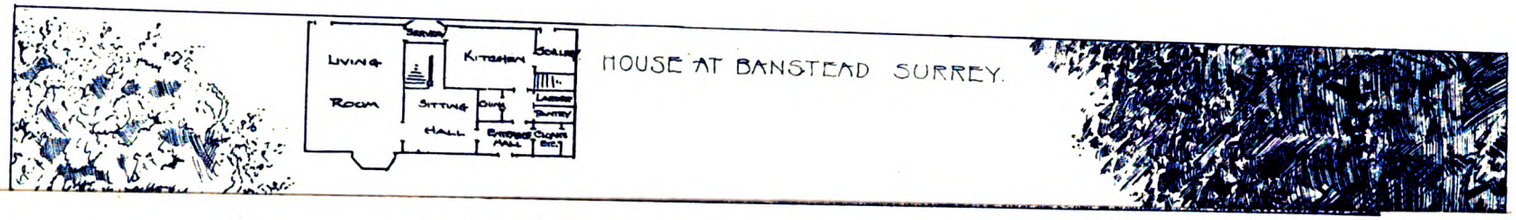

EXAMPLES OF DOMESTIC ARCHITECTURE.

BY GEORGE A. JOHNSON ARCHITECT.

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EXCAVATIONS AT MELITA, MEXICO.

SOME interesting account is given in the *Mexican Herald* of the excavations carried out under the superintendence of Prof. Marshall H. Saville, curator of the Section of Archæology of the Department of Anthropology of the American Museum of Natural History of New York during the past winter. Professor Saville's work was entirely excavating. The work of reparation and restoration upon the ruins being done by the Mexican Government under the direction of Don Leopoldo Batres, Government Inspector of Archæological Monuments, will be finished, with the exception of the wall which is to be built around the ruins, within a week or ten days. The work of constructing the wall only requires a short time.

The subterranean room found just north of the group of buildings farthest north, now a part of the Catholic church, did not develop more than was described some time ago in the *Herald*. The room was found a few feet north of the large room now used by the curator for his stable. This room was evidently originally the main, or at least the first room of the palace. On its north side was an entrance of three doorways, similar to the entrance to all the buildings in the main groups at Mitla. An excavation was made in front of this entrance as being the most likely place to find the entrance to a subterranean room, if any existed under the palace. This excavation was rewarded by the finding of a room 5 ft. wide and 17 ft. long. The walls were made of rough stones covered with adobe. Upon this were two layers of cement. The first layer bore traces of painted designs, but were too much destroyed to make out anything of value. The second, or outer, covering was covered with a coating of plain red. The room was evidently of no particular importance. There being no further indications of a subterranean room about this group no further excavation was done there. The work of clearing away the dirt and débris from the outer foundations of the south group of temples was completed with satisfying results. Traces of the flight of steps leading up from the outside of the platform of the west side of the square were found; just enough to show that there had been a flight there.

On the outer side of the east side some splendid grecque, or mosaic, work was found. This was preserved only on the south half of the face of the foundation. There were three panels of grecque work, the middle one slightly above the two end panels. The designs of the grecques were large letter S's surrounded with scrolls of straight-line geometric figures. The grecques were in a splendid state of preservation, and the panels are among the most beautiful found on any of the ruins. The grecque work ended about the middle of the building at bedrock, and had evidently been continued irregularly, following the rock, on the northern half of the foundation, almost entirely destroyed. The remains of a flight of steps, or, rather, a grand stairway, were found on the outer south side of the north group, or square, leading up to the cement platform, probably used as an audience platform, as previously described in the *Herald*. These steps were found between the outer walls of the two groups. As previously described in these columns, there is a cement floor between the two groups. The finding of the steps shows, however, that they were entirely separated, but that there was probably communication between the two, by descending steps from one, crossing the cement-floored yard and ascending the steps of the other. An excavation was started in a mogote, or mound, south of the village near the base of the mountains, but it early indicated its fruitlessness, and the excavation was abandoned.

The work of reparation and restoration under the able supervision of Sr. Batres, being, of course, entirely distinct from the work which Professor Saville is conducting, is being thoroughly and completely done. The steps leading up to the Temple of Columns, previously described, have been finished and painted red, as they undoubtedly were originally. The outer walls of the building have been restored so far as is possible. In front of the building, on top of the substructure at a level with its base or foundation, a narrow strip of cement has been restored, forming a narrow platform. This has also been painted red. Professor Saville expressed himself as being entirely satisfied with his winter's work, or, rather, with his two winters' work at Mitla. The results will be published in book-form and will comprise an exhaustive work on the ruins at Mitla, and vicinity, and the ancient civilisation of the Toltec or Nahuan tribes.

THE BERLIN FIRE CONGRESS AND THE BRITISH FIRE PREVENTION COMMITTEE.

IN acceptance of a pressing invitation from the German Government to attend an International Fire Congress, to be held at Berlin next week in connection with the Fire Exhibition which was opened on Saturday, the British Fire Prevention Committee will be represented by a deputation comprising Mr. Edwin O. Sachs, chairman; Mr. Max Clarke, A.R.I.B.A.; Mr. F. R. Farrow, F.R.I.B.A., district surveyor, Hampstead; and Mr. Ellis Marsland, district surveyor, Camberwell. The deputation will be taking the opportunity to examine the general arrangements as to the working of the Building Law at Berlin, as well as the influence of the new theatre, factory, and workshop regulations upon modern structures in that capital; and they will, on their return journey, visit Hamburg, with a view to studying the general fire protective arrangements of the port, and the more recent forms of warehouse construction which have been adopted in that city.

The deputation leave on Tuesday, *via* Ostend and North Express, for Berlin, and, after paying some official visits on Wednesday and inspecting various buildings, will view the exhibition, and attend an informal reception in connection with it. On Thursday the deputation will attend the opening of the Congress, which will be an important Government function, attended by the Ministers of State, and held in the new Houses of Parliament. Of the four opening addresses one will be by Mr. Edwin O. Sachs, on the organisation of the committee and its investigations in fire-resisting materials. The afternoon will be occupied with visits to electrical factories, and in the evening the deputation will attend the banquet at the exhibition. On Friday forenoon a number of lectures will be attended, among which those of interest in England will deal with protection in warehouses, with cotton fires and fires on board ship. In the afternoon the deputation will visit the Royal Palace, and attend a parade of the Berlin Fire Brigade. In the evening the party will be entertaining a number of public officials to dinner at the Hotel Bristol in return for the courtesies enjoyed, and will afterwards visit an evening *fete* at the Zoological Gardens. The whole of Saturday will be spent in visiting warehouses, shop property, theatres, and other public buildings, as well as the testing station of the Royal Technical College at Charlottenburg, whilst in the evening the deputation will be received by the Mayor and Aldermen of Berlin. After the intervening Sunday the visitors will visit Hamburg, where their attention will be particularly devoted to modern buildings in the harbour and to fire protective arrangements in connection with the free port.

The professional part of their visit will terminate on Monday night. The observations of the deputation, both at Berlin and at Hamburg, at the exhibition, and in attendance at the lectures of the Fire Congress, will be embodied in an exhaustive report, each member of the deputation taking up a special chapter dealing with that part of the subject with which he is particularly conversant. The report will be published in due course.

THE INSTITUTION OF ELECTRICAL ENGINEERS.

THE Council of the Institution of Electrical Engineers have arranged for a fortnight's visit of the members to Germany, where the leading installations and establishments connected with the science and practice of electricity will be inspected. The party will be divided into three sections, the first of which will visit Berlin only, whilst the second will visit Berlin and Dresden, and the third Nüremburg, Frankfurt-on-Maine, etc., in addition to the foregoing places. The entire party will leave London on Saturday, June 22nd, for Hanover, which they will

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reach on Sunday. A dinner will be given to the members by the town of Hanover in the evening. On Monday the party will proceed to Berlin, visiting the central electricity stations and a converter station in the afternoon. In the evening there will be a reception and supper offered by the Allgemeine Elektricitäts Gesellschaft and Messrs. Siemens and Halske, to which the ladies of the party are invited. On the following day Messrs. Siemens & Halske's works and electrical museum in Charlottenburg will be visited in the morning, and the Berlin new elevated electric railway in the afternoon. On Wednesday the cable works of the Allgemeine Elektricitäts Gesellschaft and the tunnel under the river Spree will be visited, and in the evening a dinner will be given to the institution by the two firms who hitherto had entertained the members. On the following day visits will be made to various works, which will bring the official visit to Berlin to a close. The second and third groups will in the afternoon proceed to Dresden, where they will be received in the evening in the Gewerbehaus. On Fiday morning papers will be read at a meeting of the German Elektro-Technical Society, whilst in the afternoon visits will be made to the light and power stations of the town and to the State heat-transmission plant and electricity works. On the following day the German Elektro-Technical Society will meet in the morning, and there will be visits to various electricity works in the afternoon and an outdoor reception in the evening. Sunday will be devoted to a visit to "Saxon Switzerland," and on Monday the third group will proceed to Nuremburg, visiting local works on Tuesday and proceeding on Wednesday to Frankfurt, where visits to works and an evening entertainment will complete the programme of the day. Thursday will be devoted to visits to central stations and installations in Frankfurt, and on Friday, July 5, there will be an excursion down the Rhine to Cologne, which will be so arranged as to permit of the members arriving in London on the morning of the following day.

THE PUBLIC HEALTH DEPARTMENT OF THE CITY OF LONDON.

THE annual report of the City Engineer (Mr. D. J. Ross) on the works executed by the Public Health Department of the Corporation of London during last year is an interesting one. During the period under review 100 cases of dangerous structures were reported, and in 99 the defects were repaired. The extent of the work of the Improvements Committee is shown by the fact that claims amounting in the aggregate to about £405,000 were negotiated during the year, and these claims were settled for about £288,000. At the end of the year claims to the extent of £142,000 were under consideration.

The cost of the water supply for cleansing purposes showed an increase on the previous year's figures amounting to £4,074 18s. 6d., as against £3,737 4s. 3d. The Engineer reports that there are 2,540 lineal yards of subways beneath the City streets and those subways contain nearly nine miles of gas, water, hydraulic mains, and telegraph tubes, while the electric light and telegraph conduits contain some hundreds of miles of wires and cables. There are also one and a half miles of subways in the City that are not under the control of the Corporation. The quantity of water used in washing the City streets and courts was over 38 millions of gallons. The quantity of refuse removed amounted to 44,841 van-loads taken from premises and 28,708 loads of sweepings from the public ways, making a total of 73,549 loads, or about 1,414 per week, and 236 per day during the six days of the week. The number of loads of refuse destroyed at Lett's Wharf was 24,124, which yielded a residuum of 4.356 loads of ashes or clinkers, for the removal of which the Corporation had to pay.

During the period under review the Post Office authorities laid three and a half miles of trench-work in the carriage ways for telephonic purposes and nearly eight miles on the footways. During last year 5,304 yards of derelict and unidentified overhead wires were removed by the Corporation. The Engineer, in his report, says that irresponsible contractors who erect overhead wires without obtaining any permission, and who generally fail to comply with the by-laws, are a source of great trouble. There are many of these, and it is difficult to ascertain the name of the erector and owner of an unidentified overhead line that zigzags across the City. Several such lines having been abandoned by the owners were removed as being dangerous.

CHURCH BUILDING AND ACCOMMODATION.

THE annual general court of the Incorporated Church Building Society was held last week at the Church House, the Archbishop of Canterbury presiding. The committee's report showed that £8,035 had been granted for 31 additional new churches, £285 for four churches rebuilt, £1,590 for 33 churches enlarged, rearranged, etc., and £355 for 15 mission buildings. The districts assisted had a population of 454,572, for whom the church accommodation had thus been increased from 28,584 to 49,328, nearly all the added sittings being free. Since the society's formation in 1818 it had made grants of £892,428 for 2,346 new churches and chapels and for the rebuilding, enlargement, or otherwise improving of 6,188. The estimated further expenditure by the public on these buildings had been £15,098,253, resulting in the provision of more than 2,000,000 additional seats, of which about three-fourths were free. Most of the 14 churches assisted by the Wheatley Balme grants of £1,000 each would be consecrated before the end of this year. The committee had adopted a revised set of architectural requirements, as some of the old regulations, while reasonable in the case of new buildings, could not be insisted on in many of the old churches seeking aid.

The Hon. E. P. Thesiger, in moving the adoption of the report, announced that the Ecclesiastical Insurance Company had decided to raise its annual grant to this society from £200 to £250. He also urged on church authorities to insure their buildings more adequately. Mr. J. Oldrid Scott, F.S.A., one of the committee of honorary architects, seconded the motion, and the report was then adopted.

RECENT EXAMPLES OF BRIDGE-BUILDING.

PAPERS were read at a meeting of the Institution of Civil Engineers during the past session on the "Glasgow Bridge," by Mr. Benjamin Hall Blyth, M.A., M.Inst.C.E.; "Railway Bridge over the Fitzroy River at Rockhampton, Queensland," by Mr. Walter James Doak, B.E., Assoc. M.Inst.C.E.; and "The Niagara Falls and Clifton Steel Arch Bridge," by Mr. Leffert Lefferts Buck, M.Inst.C.E.

THE GLASGOW BRIDGE.

Mr. Blyth's paper dealt with the taking down and rebuilding of the bridge over the Clyde at the Broomielaw, Glasgow, constructed by Telford in 1833. It mentioned the reasons which induced the Corporation of Glasgow to obtain, in 1892, an Act of Parliament for the construction of a new bridge of four spans, and later, in 1894, to obtain another Act, repealing the former and authorising a bridge to be built, which, while considerably increasing the width and strengthening the foundations, still preserved Telford's original elevation. The bridge, as rebuilt, consisted of seven spans varying between 52 ft. and 58 ft. 10 in. Each of the piers was carried by four 15-ft. cylinders, which were sunk by means of pneumatic pressure to a depth of 75 ft. below springing-level. Centering was provided for all the seven arches, and all the arches were completed before any of the centres were struck. The piers were of freestone masonry faced with granite, and the arch-stones were granite throughout. Provision was made for gas, water and electric mains under the pavements. The work was begun in 1895 and completed and opened for traffic on the 24th May, 1899.

A QUEENSLAND BRIDGE.

Mr. Doak's paper described the railway bridge over the Fitzroy river, connecting the central railway system of Queensland with the deep-water port of Broadmount. It carried a double line of way of 3-ft. 6-in. guage, and consisted of two 250-ft. spans, and three 100-ft. spans. The open-caisson method was adopted for sinking piers Nos. 1 and 2 in the river bed, piers Nos. 3 and 4 being on

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land. The caissons were of wrought iron with straight sides and semi-circular ends. The framework of channel and T-bars was covered with buckle plates, 4 ft. square, wherever possible, and with plain plating elsewhere. The excavation for sinking was carried out by divers, as were also the concreting operations. Concrete in bags was first laid round the inside edge of the caisson, and the filling-in up to low-water level was accomplished by lowering the concrete through the water in skips. The rest of the concreting was performed in the open air in the ordinary way. For the 250-ft. spans a hog-back Linville truss was adopted, the curve of the top boom having a radius of approximately 538 ft. The depth of girder at the ends was 16 ft. 6 in., and at the centre, 30 ft. 9 in. The web-bracing consisted of a double system of vertical posts and inclined ties. The cross girders were suspended to the lower ends of the vertical posts by tongue plates. The main girders were 26 ft. apart from centre to centre. The deck was of the American type, the rails being laid on ironbark sleepers carried by steel longitudinals, riveted at the ends to the webs of the cross girders. Upper and lateral bracings and vertical sway-bracings were provided, also heavy portal-bracings. The 100-ft. spans were carried by simple rectangular Linville trusses, 16 ft. 6 in. deep, with a single system of web-bracing panels. A footway, 5 ft. wide, was provided on the downstream side, carried by a light latticed parapet-girder resting on the ends of steel cantilevers riveted to the ends of each cross girder. The 250-ft. spans were built on staging mounted on four trolleys. They were then run forward to overhang, and a hulk was placed under the end at low water, and lifted the end of the span on the tide rising. Span and hulk were then hauled across the opening, till the end of the span projected over its position on the centre pier. On the tide falling, the span came down on to its bearings, and the hulk was removed. The main girders were designed to carry on each track a train load of 0·66 ton per lineal foot, preceded by two B15 engines weighing 51·7 tons each. In floor-beams a working-stress in tension of 7·5 tons per square inch for dead load and five tons per square inch for live load was adopted; in main girders 7·5 tons per square inch for dead load and six tons per square inch for live load.

BRIDGE OVER NIAGARA RIVER.

Mr. Buck's paper described the bridge crossing the Niagara River between Niagara Falls and Clifton, about 300 yards below the American Fall, and about three-quarter mile below the great Horseshoe Fall on the Canadian side. The first structure on this site was a suspension bridge, erected by the late Mr. Samuel Keefer, M.Inst.C.E. This had been widened and subsequently rebuilt by the author; and when the question arose of further increasing its capacity to provide for the passage of electric trolley-cars, the author recommended the substitution for it of the steel arch bridge described in his paper. The river at the site of the bridge being 180 ft. deep, and having a current of between four and five miles per hour, falsework was out of the question. Notwithstanding the large span of the new bridge, it was calculated that not only would it cost considerably less than widening and strengthening the old suspension bridge to a similar capacity, but it would be stiffer and stronger. For several reasons it was decided to brace the ribs instead of the spandrels of the arch; but the author doubted whether a braced-rib arch was as economical as one with braced spandrels, and, after experience of both types, favoured the latter where it could be used. The bridge consisted of a main span of 840 ft. and two end spans, one of 190 ft. and one of 210 ft. The main span was a two-hinged parabolic braced-rib arch, supporting the floor system by means of vertical bents resting on the top chord of the arch at the main panel-points; the end spans were pin-connected inverted bow-string girders. The material was basic open-hearth steel, required to have an ultimate tensile strength of 62,000 lbs. to 68,000 lbs. per square inch, an elastic limit of at least 33,000 lbs. per square inch, and an elongation of at least 20 per cent. on an original length of 8 in. The bridge carried on one level two lines of trolley-car tracks, two carriage-ways outside the car-tracks and two sidewalks. The floor was not horizontal, being 8 ft. 6 in. lower at the Canadian end than at the New York end. For the abutments 1,417 cubic yards of concrete and 220 cubic yards of masonry were required; the small amount of masonry needed showed the natural advantages of the site for an arch bridge. The abutments on the New York side rested on solid sandstone rock, and it was expected that the foundations on the Canadian side would be similar, but excavation showed the material underneath the abutments to consist of boulders, ranging from pebbles to blocks several cubic yards in size, closely embedded in a matrix of gravel. On this material foundations of concrete were built, with flaring sides to give ample base, extending back to the vertical face of the solid rock. The factors of safety throughout were large, the abutments being built with a view to providing for an increase of 25 per cent. in the loading, should it become desirable to increase the capacity of the superstructure in the future. The rise of the arch, from the centre of the end pins to the centre of the rib trusses at the crown, was 150 ft. The span was divided into 20 main panels of 42 ft. each, each of these panels being divided in the ribs into two equal sub-panels. The top and bottom chords of the arch ribs were united in solid web sections at 10 ft. 6 in. from the centres of the end pins. These web sections and the end posts bore on steel castings, which in turn bore on pins 12 in. in diameter and 5 ft. 10 in. long. The pins were supported by cast-steel shoes, resting on seats in built steel shoes, arranged to distribute the pressure uniformly over the faces of the masonry abutments. The details of the end bearings and of the systems of bracing were fully described and illustrated in the paper, and the methods of calculating the stresses in the arch were described in an Appendix. The bowstring end spans had been used because the rock on each side of the river was stratified, the strongest and most durable portion occurring at the top; and had the top stratum been cut away to make room for deeper end spans, the rock below would soon have crumbled and disintegrated. The end spans were erected first by means of falsework and next the end bents of the main span were raised. The tops of these bents were connected to anchorages formed in the solid rock some distance back from the face of the cliff. The anchorage connections were formed partly by the top chords of the end spans and partly by eye-bars, an adjusting toggle being inserted close to the anchorage. The several panels of the arch rib were then built out from the abutments, each panel being connected to the top of the end bent by a set of fore-anchorages. When the two halves met and were connected together by the centre pins in the bottom chord, the three-hinged arch thus formed was converted into a two-hinged arch by means of hydraulic jacks, with which the top chords were forced apart at the centre until the requisite stress for the amount of dead load then carried was imparted to them. It was calculated that this would require a pressure of 375,000 lbs. to be exerted on each top chord, and the openings between the ends of these chords had to be increased from 3 in. to 6 in. by direct compression. This anticipation was exactly realised, thus testifying to the accuracy of the calculations, shopwork and field measurements. In the erection of the bridge considerable use was made of the old suspension bridge adjoining, which was kept intact as long as possible, the travellers for the new work being supported on the top chords of the stiffening truss of the old structure. Although, according to the worst conditions previously known, danger from water and ice was amply safeguarded, an ice-jam exceeding all past experience occurred in the course of the construction. The ice was swept against the steel work adjacent to the abutments, and on each side four members were badly bent, but no other damage was done. To guard against similar trouble in the future heavy concrete walls were built around the abutments, and the first two panels of laterals in the plane of the lower chords on each side of the river were changed from latticed to plate-web struts.

THE scheme decided upon by the Colwyn Bay Urban District Council for the extension of the promenade from Colwyn Bay to Rhos-on-Sea has been approved by the trustees of Sir George Cayley's estate, who are contributing £45,000 towards the scheme. When completed it will be one of the finest promenades in the kingdom, extending from Old Colwyn to Rhos, a distance of three miles.

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TRADE NOTES.

THE interior fittings of the City Asylum Chapel, Dartford, viz., the pulpit, organ, sittings, and doors, are of solid oak, and have been polished under contract from Mr. C. Wall, the builder, by "Ronuk," Limited, 83, Upper Thames Street. In this process of polishing no spirit varnish is used, the grain of the wood showing quite clearly through the beautiful toned surface that "Ronuk" gives. Architects should note the advantages claimed for this process, and inspect the results for themselves.

HIS MAJESTY'S Office of Works have entrusted the St. Pancras Ironwork Company, Limited, with the fitting up of the stables at the British Embassy in Paris. Among other stables which this old-established firm have fitted this year are those of Lord Durham (at Newmarket), the Countess of Lovelace, Sir Audley Weeld, Sir Wm. Marling, the Hon. W. F. D. Smith, M.P., T. Layland Barrett, Esq., M.P., E. J. Stanley, Esq., M.P., W. S. Curcard, Esq., etc., etc.

MESSRS. WM. POTTS & SONS, clock manufacturers, of Leeds and Newcastle-on-Tyne, have just completed a clock and bell for a castle near Fort William, N.B., and have also in hand a new illuminated hour striking clock for Annan Town Hall, N.B. They have likewise received instructions to fix a new illuminated turret clock for the Leeds Corporation at the Armley New Free Library, and a large Cambridge quarter chime clock for the Midland Counties.

MACKAY'S Patent Direct-acting Turret Ventilators, supplied by the sole makers, Messrs. Cousland & Mackay, ventilating engineers, Glasgow and Manchester, have been used in the ventilation of the new hospital recently opened at Dumbarton.

JOTTINGS.

THE salary of Mr. John A. Brodie, city engineer of Liverpool, has been increased by £400.

THE net profit on the Leeds Corporation trams during the past year amounts to £31,058.

AN oak just felled on the Hall Farm, Tivetshall, Norfolk, measured 7 ft. through the base.

THE whole of the builders' men, to the number of 12,000, are out on strike in Milan in consequence of the masters' refusal to grant a rise of wages.

A MEMORIAL window to Major-General Wauchope, who fell while leading the Highland Brigade at Magersfontein, has been unveiled in St. Giles's Cathedral, Edinburgh.

THE Governing Body of Christ Church, Oxford, have decided to carry out the electric lighting scheme prepared by their consulting engineer, Mr. Morgan Williams. The contract has been placed with Messrs. Hill, Upton & Co., of Oxford. Mr. Williams has just been appointed consulting engineer to the Willesden Board of Guardians in respect to their new infirmary.

A MOVEMENT has been started by Mr. Eden Philpotts for founding a memorial to Blackmore in Devonshire. We believe that up to the present moment no memorial of the novelist exists in the county which he has made so familiar to the reading public. The Dean and Chapter have granted a space for the erection of the memorial in Exeter Cathedral, and it will be the work of Mr. Harry Hems.

DURING the present summer the Plymouth, Stonehouse, and Devonport tramways' system is to be "converted." At present the gauge of the line is 4 ft. 8½ in., and the system is worked by horse-power. By the new scheme electric traction will be substituted, and the gauge will be reduced to 3 ft. 6 in., which will make the line uniform with the other systems in Plymouth and Devonport.

FRENCH engineers are about to begin the construction of a viaduct which, it is claimed, will be higher in the air than any other building of the kind in the world. This will be known as the Viaduct of Fades, and is to be over the valley of the Sioule, which the Orleans Railway line crosses between Montlucon in the Allier and Clermont Ferrand in the Puy-du-Dome. The construction is to be of steel, and the cost is estimated at £112,000.

THE City Parish Council of Aberdeen are now about to proceed with the erection of a new poorhouse on the lands of Oldmill, formerly the location of a boys' reformatory, about three miles from the city. Plans have been prepared, and will be forwarded in the course of this week for the approval of the Local Government Board. It is anticipated that the cost of the new institution will be between £50,000 and £60,000.

THE Yorkshire Federation of Building Trades' Employers held its monthly meeting at the Westminster Hotel, Sheffield, on the 24th inst., Mr. J. Langdon, Sheffield, presiding, when the principal business was the appointment of a secretary to fill the vacancy occasioned by the death of Mr. Sutcliffe Hanson, of Halifax. There were four applicants for the office, and Mr. G. Stanley, secretary to the Hull branch, was unanimously elected.

THE Gateshead School Board are about to commence the building of Kelvin Grove School, from the design of Mr. J. Landell Nicholson, architect, 55, Northumberland Street, Newcastle-on-Tyne. Mr. Nicholson's design was placed first in competition last year, and its carrying out has been delayed through the bricklayers' strike, which was settled recently. This, the first of two blocks, gives accommodation for 400 infants on ground floor and 360 junior boys and girls on first floor, at a cost of about £7,000.

THE Gainsborough Urban Council have decided to submit for the approval of the Local Government Board a scheme, estimated to cost £24,281, for the improvement of the sewerage of the town. Its object is to avoid the flooding of the lower portions of the town when the sewer outfalls to the Trent are tide-locked. The scheme provides mainly for a large intercepting sewer in Trinity Street, between the hills and the lower levels, and various intercepting sewers in other power portions of the town.

THE present scheme of the Birmingham Corporation for taking water from Mid-Wales to Birmingham is approaching completion, and the contractors will shortly carry huge mains into the heart of the city. The original estimate of the cost of the scheme was seven millions, of which four millions were for the first part of the scheme and the remainder for duplicating the mains when required. The estimates, however, have been enormously exceeded, and it is considered probable the first part will cost a million and a half more than was estimated.

A MEMORIAL window has been erected in St. Matthew's Church, Nottingham, in memory of the late Dr. R. T. FitzHugh, M.B., who died at Deelfontein, South Africa, from enteric. The window depicts St. Luke, the physician, holding an open Bible, the pages of which bear the text, "Whoso loseth his life for My sake shall find it." The window is lancet-shaped, and over the figure is the canopy, while at the base is the inscription, adorned by a laurel wreath. The window has been executed by Messrs. Geo. F. Gascoyne & Son, stained glass artists, Nottingham.

A NEW Congregational Church has been erected in Old Chester Road, Tranmere, Birkenhead. The church consists of nave, transepts, and end gallery, provision being made in the chancel for an organ. There are three entrances to the church, two from Old Chester Road, and one from the rear, and accommodation is arranged for over 500 adults. Two vestries are provided. The elevations are late Gothic in design, a tower being arranged on the north-east angle. White Storeton stone, relieved by red Tranmere sandstone, is used for the fronts to Old Chester Road. The contract has been carried out by Mr. Richard Allen, of Birkenhead, the architect being Mr. T. W. Cubbon, Birkenhead.

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The British Architect.

LONDON: FRIDAY, JUNE 7, 1901.

ARCHITECTURAL EDUCATION AT THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY.

WE have perused with considerable interest a volume we have received descriptive of the Department of Architecture at the Massachusetts Institute of Technology. The Massachusetts Institute was the first school in the States to introduce a regular course in architecture. This was instituted in 1866, though the first regular student was not graduated until 1873. From the beginning, we are told, the scheme of instruction was based on the method pursued at the Ecole des Beaux-Arts at Paris, and in the general plan of instruction few changes have been made or demanded. There has been simply a strengthening along the original lines, due to the natural growth of the school. The two years' partial course, previously open as an alternative, was discontinued in 1891; some of the older courses have been modified, and others added to meet new conditions as they occur in architectural practice, but from the beginning there has been no change in the aim of the school, which has always demanded a thorough training by the Beaux-Arts method. Throughout the course "the acquisition of skill of hand and eye, the cultivation of good taste in line, form, colour, and design, and the mastery of the principles underlying sound construction are kept constantly in view." But it is also the aim of the department to ensure to its graduates a liberal education as well as a directly professional training. To this end supplementary studies of a more general character are provided. These occupy the student's attention during the earlier stages of his course, but as he advances the time allotted to disciplinary and non-professional studies diminishes, while that assigned to professional and fine art studies increases, until in the fourth year his whole energies are devoted to the higher branches which relate to architectural design, construction, and the history of art.

Looking through the chapters treating of the various courses of study, one cannot but be struck with the scope and variety of the subjects, and the thorough and practical way in which it is sought to deal with them. There seems to be little wanting to encourage and help the student. The premises themselves afford ample accommodation, there being second, third and fourth-year drawing rooms, together with a library containing 2,500 books, 10,000 photographs, and 6,500 lantern slides, as well as a large number of serial publications. At the top of the building is a studio, 55 feet by 60 feet, with a great north skylight, and also a modelling room. There is likewise a fine collection of casts. Illustrations are given of the fourth-year drawing room and the studio, in which industrious students are shown hard at work in their shirt sleeves. Also the library and the exhibition room are illustrated.

The schedule of the general course in architecture includes the following subjects in the first year:—Algebra, trigonometry, chemistry, freehand drawing, French (or German), English, military science, analytic geometry, theory of equations, mechanical drawing and descriptive geometry, French sight reading, United States history.

In the second year's course we have:—Design, materials, shades and shadows, freehand drawing, differential and integral calculus, physics, German (or French), English literature, European history, perspective, stereotomy, German or French.

The third year's course includes:—Design, architectural history (ancient and Romanesque and Gothic and Renaissance architecture), specifications and working drawings, freehand drawing, heating and ventilation, applied mechanics, German or French, applied mechanics, pen and ink, building stones, political economy and industrial history, business law.

In the fourth year the following subjects are taken:—Design, constructive design, history of construction, history of ornament, European civilization and art, applied mechanics, acoustics, life class, pen and ink, European civilization and art, public health and sanitation, life class, modelling, water colour, business relations, colour, thesis.

Optional subjects are architectural engineering and landscape architecture.

Such a school as this ought at any rate to prove whatever of value there may be in a high standard of professional education. It would, of course, be unfair to judge the results altogether by the illustrations of students' work given in the volume before us. Yet one cannot avoid coming to the conclusion that the examples here shown rather illustrate the failure of academic education than its advantages. For they lack the one great essential of a living individuality. They are the work of the school rather than of any particular student; the result of a system rather than of individual effort. Herein lies the greatest danger of academic education for architects. Not that they are likely to acquire too much knowledge—that they can never do—but that they may so easily become the slaves of an academic system and architectural precedents. So far there has been little in our English system of architectural education—or lack of it!—to warrant much fear on this head. And we can only hope the freedom from mischievous academic limits and restraints we have hitherto enjoyed may be continued. The Architectural Association day classes constitute an advance, and so long as they do not dissociate the student from his daily work, but are regarded as supplementary—the one to the other—then we think they will do a really good work. We have always regarded the self-help method of architectural education in this country with considerable favour, since it is more likely to develop the individuality of the student. The increased facilities for the acquisition of knowledge are to be cordially welcomed, and one recognises the advantages that attach to a well-ordered curriculum. But so far as may be possible architectural students need to be kept free from the trammels of a purely academic system, which in its inelasticity is the surest method of killing individuality in the student that we know of.

THE LATE MR. J. M. BRYDON.

AT the meeting of the Royal Institute of British Architects on Monday evening last, Mr. William Emerson, the president, in making the formal announcement of the death of Mr. J. M. Brydon, vice-president of the Institute, said that there had been many gloomy announcements to make from that chair during the last year or so of losses which had befallen the Institute by the death of distinguished and respected members, but he thought there had been none sadder than that which it was his duty to mention that day—viz., the loss of their friend and vice-president, Mr. John Brydon. When a man died full of years and with his work carried out to completion, one felt that his life had seen a fitting ending; but in the case of Mr. Brydon, and in that of Mr. William Young, who died a few months ago, they had made the designs for the largest work they had ever been employed upon, but before they could even lay one stone they had been called away. He would ask that an expression of their sorrowful regret for the loss they had sustained be recorded on the minutes, and that a letter of sympathy and condolence be forwarded from the Institute to Mrs. Brydon, his widow.

Mr. Ashton Webb, A.R.A., said he was sure they all felt with the President the gloom and solemnity of the occasion. Death had been very present with them lately. At their last meeting it was Arthur Cates; at the present it was John McKean Brydon. They might almost use the words of John Bright on a memorable occasion: "The Angel of Death is present among us; you can almost hear the beating of his wings." John Brydon, whom they all knew so well, was so keen, so alert, so genial, and so kindly, that it seemed almost impossible, even for those who saw him laid to rest the other day, to realise that he would never sit in his accustomed place on these benches again. He was a man of strong opinions, and a man who did not shrink from expressing them strongly; but he also had the feeling of give and take which was necessary to the carrying on of the work of this life, and he never pressed his opinions beyond what he was entitled to do. As an

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architect he strenuously advocated breadth and simplicity in architecture, and in his work, he endeavoured, and to a great extent succeeded, in carrying out those principles. He (the speaker) had not the privilege of knowing Mr. Brydon as intimately as some of those present, but he knew that when he first came to London his life was not free from struggle and almost hardship. As a man, sorrow and bereavement had fallen to him, perhaps somewhat more than to the average man amongst them; and as at last he grasped the prize it was most pathetic and almost tragic to think that he himself was snatched away and that the prize was to fall to another hand. It made them feel with Burke, "What shadows we are, and what shadows we pursue." The present was not the time, and he (the speaker) was not the man to give a critical notice of his work, or of Brydon as a man, but it was a time for them to express their great regret and sorrow that they should never see him there any more. It was also fitting and right that they should convey to those dear to him whom he had left behind their sincerest sympathy and condolences with them in the great loss which they had sustained, which they his brethren had sustained, and which the Royal Institute, which he had served so long, so faithfully, and so well, had sustained.

Mr. John Belcher, A.R.A., said that the death of Mr. Brydon had come as a great blow to every member of the Institute, not only because they were not acquainted with his illness, and were not aware that he was seriously ill, but because he was one whom they felt they could ill afford to lose. He was a most conscientious artist, working always on quiet and safe lines. He hated meretricious ornament, and highly favoured that which was dignified and monumental in their art. In those respects he set a good example to most of them. But especially did he set them a good example in the interest and affection he showed for the Institute, of which he was so staunch a friend. He never lost an opportunity to favour the Institute, and to do what he could to advance its interests. He was also one who assisted greatly the younger members of the profession, both by his interest in them and by his kindly counsel and encouragement. He was, as Mr. Webb had said, a genial companion and a good friend. The members of the Council would long mourn their colleague; he was always so energetic and ready with good and sound advice and practical assistance. There was much more that could be said about his friend Brydon, but their duty that evening was to express their sympathy with his widow and family in their deep sorrow, and the vote which had been moved had his sincerest support.

The vote having been put from the chair, was passed in silence.

NOTES ON CURRENT EVENTS.

THE Architectural Association held their annual dinner on Friday evening last at the Criterion Restaurant under the presidency of Mr. W. Howard Seth-Smith. The first of the two principal toasts of the evening, "The Royal Academy and the Royal Institute of British Architects," was proposed by Mr. F. T. Baggallay, who referred to the valuable assistance these institutions, despite certain adverse criticism, rendered to the progress of architecture and the architectural profession. Mr. Aston Webb, A.R.A., responded for the Royal Academy, and alluded to the educational work carried on by the Royal Academy and the Architectural Association. Mr. William Emerson responded for the Institute of British Architects. The next toast was that of "The Architectural Association," which was proposed by Mr. W. J. Locke and responded to by Mr. Seth-Smith and Mr. Henry T. Hare. The various toasts and speeches were interspersed with songs and humourous sketches, and the company, numbering nearly one hundred, spent a most enjoyable evening.

THE Hereford municipal buildings competition has attracted 45 competitors, whose designs are now being considered by the corporation building committee, assisted by a professional assessor.

FOR the most suitable design for the alteration of certain property in Main Street, Egremont (Cumberland), the trustees of Kenlis Lodge offer a premium of ten guineas, for which paltry sum the design is to become the absolute property of the trustees. When will these promoters of small competitions learn wisdom?

ELSEWHERE in our present issue we give an American fire expert's opinion in respect to the fire risks of the National Gallery. He asserts in the first place that the Gallery is not even fire-proof in its construction, whilst in regard to the contiguous dangerous structures he declares that if once the barracks or Hampton's furniture warehouse were once well alight the National Gallery risk would not be worth five shillings. Government intend doing something towards the partial isolation of the Gallery from its surroundings, but it seems a pity they do not initiate a complete and satisfactory scheme. As a nation we could better afford the few thousands necessary to carry out such a scheme than endure the irreparable loss of the Gallery and its priceless treasures, which a serious outbreak of fire would almost certainly entail.

YET another step in advance has been made in connection with the Liverpool Cathedral project. The Cathedral Committee met on Monday last, when it was duly resolved to recommend the Lord Bishop of Liverpool to adopt the site of St. James's Mount. This is the site which Mr. Bradbury, the diocesan surveyor, recommended as in every way the most suitable in his report upon the subject, and which we referred to in detail last week. The Committee have also signified to the Bishop that they can place at his lordship's disposal for the erection of the cathedral promised contributions amounting to £125,000. The next question for consideration will presumably be that of a design, and it will be interesting to see whether the Committee will adopt the design placed first in the competition which took place some years ago, or will seek for a new one.

THE meeting held at Glasgow on the 30th ult. to discuss the Architects' Registration Bill was hardly a success, only fourteen persons being present. Mr. Walter Emden, president of the Society of Architects, who occupied the chair, remarked at the outset that he was afraid the meeting was so small that while they would be willing to give some general outline of the subject they were met to discuss, they could hardly expect to commit the architects of Glasgow and district to a particular resolution on such a meeting. Mr. Ellis Marsland, the secretary, then read a paper on the subject, and several questions were answered, and the proceedings terminated.

THE members of the Edinburgh Architectural Association on Saturday last visited Balmanno Castle, a fine sixteenth century mansion-house, surrounded by a remarkable moat, near the foot of Glenfarg, in Perthshire, by the kind permission of Mr. W. Livingstone Watson, of Ayton, and of Mr. David Dow, tenant. Mr. William M. Page, hon. secretary of the Association, acted as leader, and read a descriptive and historical paper illustrated by plans comparing the Balvaird, an adjoining castle, with Balmanno. The company then drove to Abernethy, and visited the Round Tower there, which was minutely examined, under the leadership of the Rev. Dugald Butler, M.A., minister of Abernethy.

IT was announced at a meeting of the Birmingham Corporation on Tuesday by the Lord Mayor that the offer of a famous collection of pictures made two and a half years ago by Mr. J. T. Middlemore, M.P., had been withdrawn. The pictures included works by Sir Edward Burne Jones and Holman Hunt, estimated to be worth at least £20,000. They were offered on condition that the present corporation art galleries were extended, but the period during which the proposed gift held good having expired, and nothing having been done in the way of extension the offer had been withdrawn. The Lord Mayor, however, in making the announcement, said that Mr. Middlemore gave him permission to say that he should, of course, be perfectly conversant with all that was being done in Birmingham to make the provision he hoped would have been ready by this time, and if when they were ready with their new building the pictures should remain in Mr. Middlemore's possession—and he believed he had no present

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intention of parting with them—he was led to hope that the offer might in some way be renewed.

THE eminent Hungarian sculptor of the past generation, M. Joseph Engel, died at Budapest last week, in his 86th year. M. Engel enjoyed a considerable reputation in London at one time, and executed some portraits, busts, and other works for Queen Victoria and Prince Consort.

SOME choice engravings of the early English school came up for sale on Tuesday at Christie's, and included a collection of engraved portraits of Lady Hamilton and portraits after Reynolds, Romney, Hoppner, and Lawrence, the properties of various owners. The more important were the following:—Lady Hamilton as a Bacchante, after Reynolds, by J. R. Smith, an open-letter proof, 310 gs.; Emma Lady Hamilton, after Romney, by Jones, finely printed in colours, 250 gs.; St. James's Park and a Tea Garden, after Morland, by Soiron, in colours, a pair, 135 gs.; the Frankland Children, after Hoppner, by Ward, 104 gs.

THE Silchester excavations in 1900 comprised an area containing the four insulæ (numbered 23 to 26 on the plan of the city), which immediately adjoin the north gates. Within this space six houses and a few buildings of minor importance were uncovered. Two of the houses in insulæ 23 and 24 had mosaic pavements of considerable interest, but by far the most important finds were the pottery and hoard of iron tools derived from the rubbish pits and wells of insula 23. The pottery included no less than 100 perfect vessels of various shapes and sizes, and amongst the iron implements were more or less complete sets of tools used by the smith, carpenter and shoemaker, an agriculturist's outfit, consisting of three plough-coulters and six mowers' anvils, and a farrier's "buttress." The results of these finds are now on view at the rooms of the Society of Antiquaries, Burlington House. About 73 out of 100 acres have been excavated, but a considerable portion of the city still remains to be explored.

THE excavations amongst the ruins of the Roman Forum are being continued with excellent results. Just at present, says a correspondent, the most active work is being done in Santa Maria Antiqua, where, under the level of the flooring of the church, a kind of crypt has been brought to light. The crypt is older than the church, and older even than the portion of the Imperial Palace which rises beside the church. The brickwork of the palace shows it to have been constructed in the second century A.D., while the bricks of the crypt clearly date from the first century. The crypt itself was filled with tombs of curious construction, but its original use seems to have been that of a rectangular fountain or fishpond. When the church was inaugurated the basin was probably built over, and tombs constructed underneath. In the tombs a number of objects were found, the most interesting being a glass vase in perfect preservation, which in course of time has acquired an iridescent colour.

SOME interesting discoveries of Roman remains have been made on the estate of Delvine, near Blairgowrie, belonging to Sir Alexander Muir Mackenzie. Excavations have disclosed a camp of about 600 yards square, with the *via principalis* and several gateways well defined, the foundations and details of several dwellings, two ovens, and a bath. Some antiquaries hold that the battle of "Mons Grampius," fought by Agricola, and described by his son-in-law, Tacitus, took place in the vicinity of Blairgowrie.

A SHORT time ago the old trysting oak in Harthill Walk, near Worksop, so frequently mentioned in "Ivanhoe" by Sir Walter Scott, was felled in order that the trunk might be preserved. The tree was one of the oldest in England, and is described by Scott as being venerable when seige was laid to the Castle of Torquilstone. On the site where the old oak stood a young oak is to be planted by the Duchess of Leeds, and then we are promised some specially interesting information as to Scott's connection with the neighbourhood, which he so vividly describes in the pages of "Ivanhoe," and the sites of Torquilstone Castle, Rotherwood, and Copmanhurst will be located.

LINDSEY HOUSE, on the west side of Lincoln's Inn Fields designed by Inigo Jones for the Earl of Lindsey in the reign of Charles II., will shortly be demolished to make way for the London County Council's new street from Holborn to the Strand. The exterior of the old house has not changed, but of course its interior has long been converted into lawyers' chambers.

THE days of Holywell Street and Wych Street are now numbered. Holywell Street is to be demolished first, and it is believed that this thoroughfare will be cleared out of existence before the end of July. In Wych Street one of the first houses to disappear will be the Shakespeare Head (No. 31) on the north side. This well-known house was kept at one time by Mark Lemon, the editor of *Punch*, and was frequented by Charles Dickens, Douglas Jerrold, and other kindred spirits.

THE proposed new highway from the Borough High Street to Long Lane will pass through the churchyard of St. George the Martyr, Southwark. The church was rebuilt in 1734, and replaced a very ancient one, in which Monk, afterwards Duke of Albemarle, married in 1652 Nan Clarges.

SOME curious inn signs are being unearthed from various sources just now. One of these—"The Case is Altered"—hails from Ipswich, and a somewhat similar one—"The Cause is Altered"—is to be found in Dover. The origin of these singular signs is stated to be that the inn in question had been mismanaged, and a change of proprietorship induced the change of sign, with a suggestive hint of the change. "Why Not?" and "The Five Alls" are two other curious signs.

AN interesting discovery has been made at the Royal Devon and Exeter Hospital, Exeter, in the shape of five of the old original high-backed rosewood veneered Chippendale chairs that formed portions of the board-room fittings when it was first opened in the middle of the eighteenth century. These were lying amongst a lot of rubbish in an unused part of the institution, and had narrowly escaped being broken up into firewood, when Mr. Harry Hems, the well-known sculptor of Exeter, happened to see them, and promptly rescued them. Mr. Hems, as one of the house visitors to the institution, directed their removal to his studios, where they have been carefully restored, polished, re-stuffed, and upholstered with straw-coloured Morocco leather. He has just returned them to their old quarters, the board-room, where they now form a handsome and interesting feature.

SOMRONE has been contending that Christ's Hospital is not the correct designation, but that it should be "Christ Hospital" as written by Charles Lamb. The *Daily Chronicle*, however, points out that "Christ's Hospital" was written before Lamb's time. In the churchwardens' account-books of St. Mary Woolnoth are preserved several sixteenth century receipt forms for rates collected for "the poore harbored" in "Christes Hospitall, signed by James peele, clerke of chrysts hospitall."

THE City Lands Committee of the London Corporation, in a report on the Bills promoted in Parliament by Christ's Hospital and St. Bartholomew's Hospital, with reference to Christ's Hospital site, recommend that no opposition should be made to the Bills in question. This recommendation has been approved by the Corporation.

BECHSTEIN HALL, in Wigmore Street, designed by Mr. T. E. Collcutt, F.R.I.B.A., was opened on the 31st ult. with an inaugural concert. There is a spacious corridor, lined with marble, leading to the hall, which is admirably arranged. The hall will accommodate 480 persons in the stalls and 100 in the gallery. Specially noteworthy features are the comfortable seats, excellent ventilation, and admirable acoustic properties.

A MOST strenuous opposition is being made to the seizure of the picturesque Grange, Kilburn, by the London School Board. The inhabitants of Kilburn have sent a petition to the Board containing some 2,500 signatures, and the Board will hardly be able to ignore it. It seems that

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other more suitable and less costly sites are available, so that it may be hoped that the opposition may prevail, and that the threatened Grange estate may yet be saved.

THE "Twopenny Tube" has afforded Londoners the most convenient and expeditious means of locomotion yet provided for them, and its extension in other directions is desirable as affording further travelling facilities for those who at present have to waste time and patience upon omnibuses which are compelled by the congestion of the traffic to simply crawl through the streets. But there seems to be a fear lest the continual and large excavations will prove a source of danger to existing buildings, and the St. Paul's authorities are opposing the projected tube from Piccadilly to the City on the ground that owing to the fact that the soil under Ludgate Hill and the immediate neighbourhood is made up chiefly of very loose gravel and sand, any excavations which would tend to drain off the underground water would cause a crack in the tremendous bed of concrete upon which St. Paul's is built. Indeed, the authorities of the Cathedral do not hesitate to say that a collapse of the sacred edifice might result, and that in any case a "settlement" of the building would take place. They consider they are not without tangible ground to justify their apprehension, since the spire of St. Mary-le-Bow is now 23 inches out of the perpendicular, a result said to be due to the excavations for the "Twopenny Tube." It is to be hoped some way out of the difficulty may be found since this Piccadilly to the City "tube" would be of immense convenience to the public.

MEANWHILE it is of interest to note that rapid progress is being made with the new North London "tube," which will bring Finsbury Park within about ten minutes of Moorgate Street. The contractors expect to finish the tunnelling by the end of the year. The tube will be 2⅞ miles long, and 16 ft. in diameter—the largest in London. The "Twopenny Tube" is 11 ft. 8 in. The Great Northern and City Railway, as the new line is called, will be the first tube in London to take full-size rolling-stock.

A PECKHAM property owner was summoned the other day by the owner of some adjoining property in respect of a claim made for £17 10s., being half the amount of £35 expended in repairing a combined drain for the two houses. It appeared that the defendant was summoned by the borough council for a nuisance, and on opening up the drain it was found to be a combined one, and defendant did the work for both houses without putting the council to the trouble of again taking proceedings. The magistrate held that the claimant could not recover the contribution sought because the work had not been done under an order of the court. If a contribution was wanted the party must wait until he was proceeded against.

IT is said that Edison has discovered a new kind of cement which will enable builders to erect houses in three or four days. He has yet, however, remarks the *Globe*, to accomplish the more difficult task of inventing a British workman who would consent to such a violation of professional etiquette.

ENGINEERING AND SANITARY NOTES.

BY CHAS. E. GRITTON, A.M.INST.C.E.

SIR W. H. PREECE'S SYSTEM OF WIRELESS TELEGRAPHY.

IT is understood that Sir W. H. Preece has been engaged for some months past in a series of experiments with his system of wireless telegraphy, and has obtained some very important results which may be published during the forthcoming autumn. It is stated that the experiments were directed chiefly to the development of the application of the wireless system to telephony. This fact of its adaptation to telephony distinguishes Preece's inductive system from the wave system of Marconi, and it is contended that it thereby obtains a superiority. Important announcements may be expected in the near future.

INSTITUTION OF ELECTRICAL ENGINEERS.

The annual general meeting of the Institution of Electrical Engineers was held last week, with the President, Professor Perry, in the chair. The report of the council stated that during the past year two new local sections, in Birmingham and Calcutta, had been created. The increase in the membership of the society continued to be satisfactory, and during the last twelve months there had been selected 21 members, 89 associate members, 5 foreign members, 140 associates, and 173 students, making a total of 428. During the year the council appointed two special committees, which were now at work, one in revising the wiring rules of the institution, and the other in considering the possibility of drawing up a set of model general conditions for electrical contracts. A committee had also been appointed to consider whether it could recommend the council to take any action to assist the electrical industry with regard to the difficulties dealt with in Mr. Magden's paper on the "Electrical Power Bill's of 1900; Before and After," read before the institution last February. The president for next year is Mr. William Langdon, of the Midland Railway.

NATURAL LIGHTNING CONDUCTORS.

In the Cambridge Phil. Soc. Proc. Mr. A. Harker describes some strange magnetic disturbances in the Island of Skye. They are found in the Cuillin hills, which are composed mainly of gabbro, and which occupy the centre of the island; and on the moorland plateaux, consisting of basalt, which extend north and west, covering about half the area of Skye. On any salient point the rocks are permanently magnetised, and very often to such an extent that by moving the compass the needle may be made to point in any direction. Dip and declination are both affected, so that with the dial horizontal the needle will often jam against the card. When a rock-face forming part of such an eminence is tested more closely with the compass it is found that certain points of the rocks behave as north poles, and others as south poles, such poles being irregularly distributed at intervals varying from inches only to feet. These phenomena are not confined to high mountain summits, but are exhibited equally by insignificant knolls on the moorland, provided they form the highest ground in their immediate neighbourhood. The localisation of these intense magnetic disturbances in such situations seems to point very decidedly to atmospheric electricity as the cause of the magnetisation of these rocks. It is not necessary to suppose that the exposed points have been struck by lightning. Indeed, the remarkable rarity of thunderstorms in Skye rather suggests that the summits act to some extent as lightning conductors. It is easy to show, too, that no great lapse of time is required for rocks so exposed to become magnetised. The stones composing the cairns erected by the Triangulation Survey are invariably highly magnetic, while the loose stones about their bases are much less so. This is true even of small cairns erected by climbers within a few years past.

NON-UNIFORM CABLES.

Before the American Institution of Electrical Engineers, Mr. M. I. Pupin recently discussed a method of constructing cables and long-distance air-lines for telephony and telegraphy, in which capacities and inductances are inserted at equal distances. When these are small compared with the lengths of the electric waves in use the periodically loaded line is said to behave like a uniform line, but with less distortion than when without the load.

TELEPHONE CONSTRUCTION.

To the National Telephone Association at Cleveland, Mr. J. E. Stewart gave some interesting details of American practice. He recommended for overhead lines 35 to 40 foot poles with 8-inch tops and circumferences of 42 to 43 inches at 6 feet from the butt, carrying 4 to 10 insulator arms. Second growth chestnut or white cedar is best, cut in winter time when sap is down. They should be spaced 40 to the mile on straight runs and 45 to 50 on curves, and buried 5½ feet with 6 inches extra for every 5 feet of length. Cross arms for 10 insulators, 3¼ by 4¼ inches section and 10 feet long, of best heart pine or fir. Bolted through arm and pole with ⅝-inch bolt, and braced with a 1¼ by ¼ inch by 28 inches wide galvanised iron. Hard-drawn copper wire No. 10 B and S is the best for long distances, and of course metallic circuits in all cases; No. 14 to 18 for subscribers' circuits; a No. 14 twisted pair, rubber-covered and braided through trees, etc., to the subscribers' place.

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Underground, wooden or terra-cotta ducts are used. The former are creosoted under 80 lbs. pressure, for preservation. A creosoted board of same width as the duct forms the floor; the ducts are laid with wooden joints, and a second board put on top. This is kept at least 2 feet below the street surface. Under terra-cotta ducts 4 inches of concrete are first laid. When multiple, 2 dowel pins, ⅜ inch by 4 inches, should be used for each section of duct. A strip of hurlap, 6 inches wide, well soaked in protective varnish, should be wrapped round the joint, which should then be grouted. The ducts should have at least three inches of cement concrete all around them. Over all a creosoted plank the full width is laid to protect from accidental excavations. Ample manholes are constructed, 450 or 400 feet apart, with walls from 9 to 13 inches and 6 feet deep, frame and covers resting upon the walls. All conduits and ducts are rodded and pilot wires drawn in before completion. The Central Union Telephone Company, of 187 and 189, Court Place, Chicago, are wise in their generation. They use for metal the preservative products of the Goheen Company, of Canton, Ohio.

BREMER ARC LAMP.

In this lamp, to which attention has been called at Kiel, the carbons are arranged horizontally, and the arc is deflected downwards by electro-magnetic means. In direct-current lamps the positive carbon contains a compound of calcium. Photometric tests would appear to show the following advantage:—(*a*) Increased efficiency, two to three times that of ordinary arcs; (*b*) improved distribution of light; and (*c*) better colour.

ELECTRICAL POWER.

From a paper read before the Glasgow University Engineering Society by Mr. G. H. Bowden, it seems that it is economical to provide cables for extension, whereas this cannot be said of steam-pipes. A complete transition to electric driving can be made in any factory without stopping the work. The capital expenditure at Dorman and Long's was £8,000; result, this was saved in two years! At Furness Withy the output has been doubled, yet the working expenses are less than formerly. In a shipyard every machine can be driven electrically except the steam hammers. The first cost of a polyphase system is greater than of a continuous current. Constantly reversing the motor or varying the speed causes difficulties to arise. Greater margin must be allowed in the powers, so that the cost of application is nearly twice that of continuous current.

A WELSH LIGHT RAILWAY.

The first sod of the Welshpool and Llanfair light railway was cut last week by Viscount Clive, the son of the Earl and Countess Powis. The line will be about eight miles long, and open up a rich agricultural district hitherto untouched by railway or canal accommodation. It will form a junction of the Cambrian Railways Company at Welshpool, and its terminus will be at Llanfair, a place much frequented by tourists. The line will be narrow gauge, and will be doubled at the various crossing places. It presents no engineering difficulties, and has been planned by Mr. A. J. Collin, C.E., the engineer of the Cambrian Railways Company. The contract has been let to Mr. J. Strachan. The railway will cost something like £45,000; towards which the Government have made a free grant of £14,500.

LEEDS WATER PROFITS.

It is estimated that the accounts of the Leeds Corporation Waterworks for the year ended March 25th will show at least a surplus profit of £10,000, after paying interest and transferring a large sum to sinking fund account.

WANTED, A LITTLE CAPITAL.

My old friend, Mr. Clement Tait, hon. sec. to the Bristol Committee for Promoting the Better Housing of the Poor, claims to have designed plans for small houses, self-supporting and self-contained, in which decent accommodation can be supplied at a profit for a rent of 3s. 6d. per week, including rates and taxes. He suggests a small syndicate who would make money and do good by keeping the poor independent of the rates. They are said to be neat-looking little houses, with a dwelling on the ground floor, and an entirely separate tenement above, each with its own front door and back garden or yard. Estimated cost, about £200. Now Mr. Editor, hurry up and beg, borrow, or steal those plans. I know Mr. Tait's earnestness and self-sacrificing labours of old, and I warn you, when he puts his shoulder to the wheel, it goes round.

FAIR, FOUL PARIS.

The sanitation of popular pleasure resorts is admittedly a matter of great importance; yet the sanitary affairs of "beautiful Paris," the playground of the world, remarks *Science Siftings*, seem to be in a terrible condition. There are 78,000 houses in Paris, and of these nearly 24,000 have drains from water-closets direct into the sewers. For the other 54,000 houses there still exist 47,913 cesspools—(so that Gravesend has no monopoly! suggestive name in this connection)—21,813 *tinettes filtrantes* of metal which retain the solids while allowing the liquids to pass to the sewer, and some 12,000 pails or tubs of wood, retaining both solids and liquids. The cesspools are supposed to be emptied once in the year, and the pails removed at least once a week. With the cesspool or pail systems there is no water laid on and no traps. An attempt at cleansing is sometimes made with a brush and a little water poured from a hand-jug. The soil-pipe is, of course, abominably foul, and the stench from it and the cesspool passes freely throughout the house.

INSANITARY GRAVESEND.

A scathing report upon the insanitary condition of Gravesend and on the L.G.B. inquiry just held in connection therewith is contained in the *Public Health Engineer*. All intelligent people are hoping for great things from this long delayed official interference, but I fear that some local so-called sanitary authorities are very much like certain boards of guardians, who, when called to order by the L. G. B. and told not to do it again, don't until the next time!

THE DECORATORS' AND PAINTERS' MAGAZINE.

No. 1 Vol. 1 of this welcome little stranger—whose impending birth was recently announced in these columns—has reached me from 46, Cannon Street, E.C. All painters and decorators should secure a copy. They will then doubtless find it difficult to do without succeeding numbers.

"EMLYN" SPECIALITIES

For builders and contractors are illustrated in a catalogue sent us by Chas. D. Phillips, of Newport, Mon., and Gloucester. Mortar mills, saw benches, guards, coke, stone and brick breakers, concrete mixers, cranes, both travelling and hand derrick, friction hoists, crab winches, cast iron and wrought iron pulleys, belting, screw jacks specially designed for motor vehicles, and weighing only 8 lbs, and patent "lock-jaw" roofing tiles are among the varied and excellent things made or sold by Mr. Phillips. We can advise our readers to write him for his price list.

ROTHENBURG-ON-THE-TAUBER.

By WILLIAM F. HUBBARD.

ILLUSTRATED BY ADELINE S. ILLINGWORTH.

OF all the strong and picturesque social conditions of times gone by, the city community of the Middle Ages should appeal most to us. It raised its head in a time when the world was as full of contending forces as the mind of a youth. It was a busy hive of life and productive labour in the midst of a wilderness of feudal disruption. The gates launched little bands forth over the wild roads, who, with infinite patience and boldness, spread a small leaven of culture into the mass of anarchy.

We read with interest of the baron in his stronghold, clanking in his armour, loud in his mirth, rough in his life, and cruel to his underlings. It is interesting to think of him floating his banneret in the train of an Emperor or lowering it in the lists of battle. We wonder at the monastic life—the quiet cloister full of mild-faced monks offering refuge to the weary pilgrim. We can see them going through their daily routine at prayer and in the cloisters, we wonder when we think of their scourgings and their patient lives, but we cannot respect them. This

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feeling goes to the brave burger who neither ran licence with his passion as the baron nor who bottled it as the priest. He is the man who added his quota to the world's progress—who, not shunning life, lived his full days in the desire of peace and industry.

The striving after the bauble of the World Empire of Rome is the main factor of Germany's peculiar development. Each successive Emperor gave away more of his heritage to his vassals to buy the mystic idea of Head of the World. Hence it is that Germany had the haughtiest princes, the most turbulent nobles, the greatest prelates, the richest monasteries, and the grandest free Imperial towns.

In the land of Frankish blood the free towns rose with a peculiar individuality. The spirit of the old conquerors asserted itself with all force even in the midst of a terrible anarchy. It is here that such noble pictures of armed peace show themselves as Nuremberg, Rothenburg, and Frankfort.

To read the fascinating history of such cities we must learn to know the walls the burgers lived behind; we must study the stones they wrought into expression of the beauty and fantasy in their minds; in the battlements they defended their peace behind we must feel the sternness of their lives; we must see the relics of the pomp they clothed their simplicity in; and a hundred things tell us they were cruel, cruel as children are.

On the rolling upland country, amid the fields, brown, green, and gold in their season, stands Rothenburg. Once on the main road between Augsburg, Wurzburg, Frankfort, and the Rhine, crusaders, pilgrims, and merchant trains made it great. Then the tide of travel turned and left it silent; no new stream of life ran over the old and half erased the lines as it has done in other ancient cities. Nuremberg is in the stream, carrying proud memories into a busy future; Rothenburg holds aloof, and lives only in the past.

The Tauber Valley winds sharply, a deep ravine, below the undulating farm country. Along the bottom the little stream runs between processions of poplars, willows, and alders, a serious brook working hard upon the wheels of twenty mills. Rothenburg backs to the crest of this ravine, and turns its face to the open country. Over the foreground of field the wanderer can see the towers and spires above the trees—a fairy town such as an artist would draw for the page of some exquisite fairy-book. The walls rise boldly on the brink of the ravine, the house gables warming in the sun behind them. From the middle of the line of the town a great spur juts out into the valley. This was the seat of the Burg—a court of the ancient Franks, and the scene of some of the noble pictures of old Germany. All is gone now save the ring wall and a remnant which still bears the proud name of the "High House of the Dukes." A dark grey building, once chapel and residence, which looks out from the lindens over the valley.

About Rothenburg it is difficult to say where the greatest beauty lies. In the evening long rays stream over the ravine and gild roofs and towers. Below, the valley lies all in shade, the meadows swelling softly up from the line of trees by the water. Above, the town glows red like a coal, and the cruel old prison tower, the Faulthurm, blushes like a girl. Each turn in the road shows a new beauty. The pinnacles of the Rathhaus and the great body of the St. James's Church cut wonderful effects in light and shade. From before the old bridge, with its double tier of arches, one gets another view, a quivering reproduction flaming in the water.

The town is entered through six gates, and it is a rare feature that the walls are still its boundaries; save a cluster of houses about the station, they go out to meet orchards and farm land. The gates are massive works flanked by bastions and deeply moated. The flanking walls are comparatively modern, but the great towers which straddle the way with their Gothic gates are all from the thirteenth century. The streets are wide, with gables turned to the front, the windows generally full of flowering plants. None of the houses are overhanging: the municipality was rich enough to spread its walls and give room even for gardens.

The centre of all is the market place and the streets radiating directly from it. Such a picture of the past has no second. On one side the Rathhaus rises, partly Gothic, partly German Renaissance. The Renaissance end flanks the square, an exquisite piece of architecture built at the end of the sixteenth century when the social prosperity of Germany was at its height. In contrast to the Gothic building at its side it shows the strides the city made in wealth and luxury within two hundred years. The Gothic is a simple edifice with a high-pitched gable, pointed with pinnacles. From the apex the tower springs, slender and wonderfully graceful. The façade is austere, bound together by a few single coursings. Then come heraldic devices and the ornamented gable—the climax is the tower. It is a good picture in stone of the city of the fourteenth century. The simple building with the decorated gable striving upward, might stand for the stern life, mixed with that idealism which was so distinctly mediæval. The court behind this front is small and full of shadows, the walls have a hundred soft colours, and the portal has had every corner bitten away by the lichen until it is soft and blended as a cool hillside. The Renaissance part tells another story. The change had come; man decided to make his work-a-day world beautiful. Here, the building is rich and every line shows the new love of earthly life and the desire to beautify it. This feeling, too, killed itself, as did the Gothic before it, but here it stands in all the beauty of its youth.

Every house about the market-place has its history, and not one disturbs the picture. Step-gables, queer little bay windows, Gothic doors and iron gratings line about the square.

And such a square, heavy with history! Emperors have ridden in state and been enthroned there; knights have drilled with pointed lances; peasants in mad revolt have filled it with their cries and sprinkled it with their blood. It has run with blood and run with wine; it has hailed returning victors and been the camping ground for conquerors. Now, it stands sunny and crowded with market booths. At one side is the fountain, its stones gilded and painted after the fashion of the late Renaissance. About this well the shepherds had their dance. Once a year they drove their flocks into the bastion of the Klingen Gate, and there, at the chapel of St. Wolfgang, their patron saint, they and their flocks were blessed. Then, in all their finery they betook themselves, with their loves, to the market square and danced about the fountain. The prettiest couple danced on the balcony of the Rathhaus tower, and the festivities closed by throwing the shepherd boys into the water. From the corner the Herrenstrasse leads out to the Burg. This is the street of the patricians, noble and wide and infinitely picturesque. On either side the old aristocrats' houses put their gables to the road, each with its great door and small windows. Behind these rather severe fronts are beautiful courts and gardens. The courts are often especially fine. The idea is evidently Italian, travelled over the Alps and through Augsburg, but the carvings and the bull's-eye windows are German.

The principal church of the town, St. James's, stands behind the Rathhaus. The Gothic artist concentrated all his fantasy on the idealism of his religion, and neglected his temporal housing; hence the church shows all the artistic possibilities of the period. Considering that it was built in the late fourteenth century it is very severe. Rothenburg was too busy fighting princes and repulsing sieging parties to build a dreamy ornate house for its worship. It is high within, the windows narrow and long, the chancel glowing with the blue and red of old stained glass. The towers, though alike in general appearance, have been made dissimilar in the detail and in the open-work tracery steeples. Of course a legend has risen about so noticeable a feature—it is the same as the apprentice column at Rosslyn—the master, enraged at the beauty of the apprentice's tower, hurls him over the parapet. The west end of the nave bridges the street which leads out to the Klingen Gate. Such glimpses, as from this street, are typical of the free town community. The fascination lies in the knowledge that all was unconsciously created. Struggling with daily life such was the expression of their labour. In the bastion of the Klingen Gate is the chapel of St. Wolfgang, the patron of the shepherds. It is a graceful picture; the little chapel, built into the wall, turning an armoured back to the world and a sweet front to its city.

In the Hospice we have an example of the origin of the

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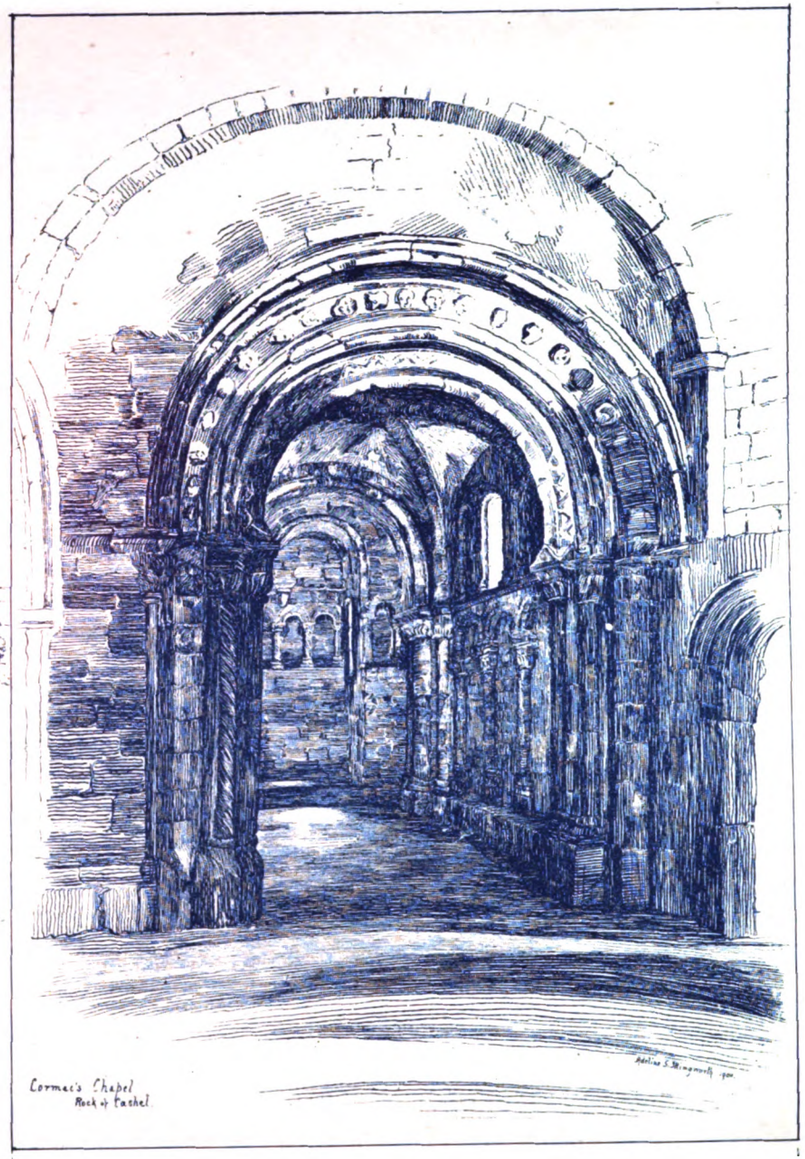
North doorway of Cormac's Chapel.

Ancient Cross
at
Rock of Cashel.



Cormac's Chapel
Rock of Cashel

IRISH SKETCHES.I

BY ADELINE. S. ILLINGWORTH.

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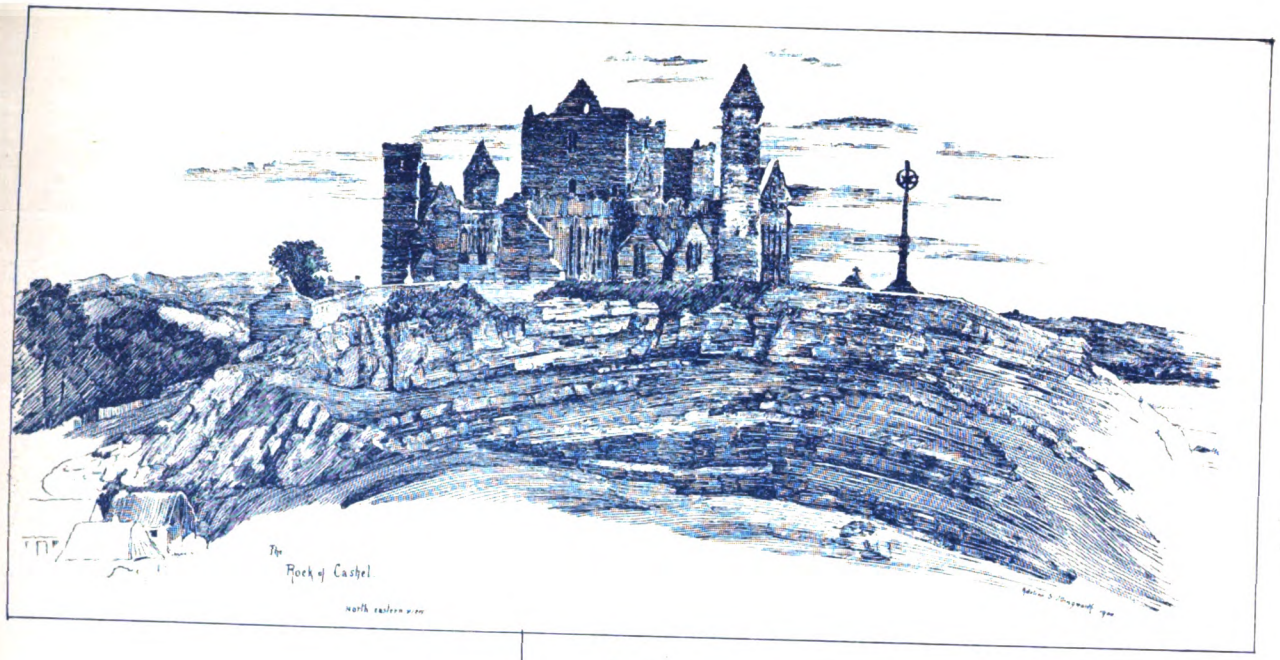

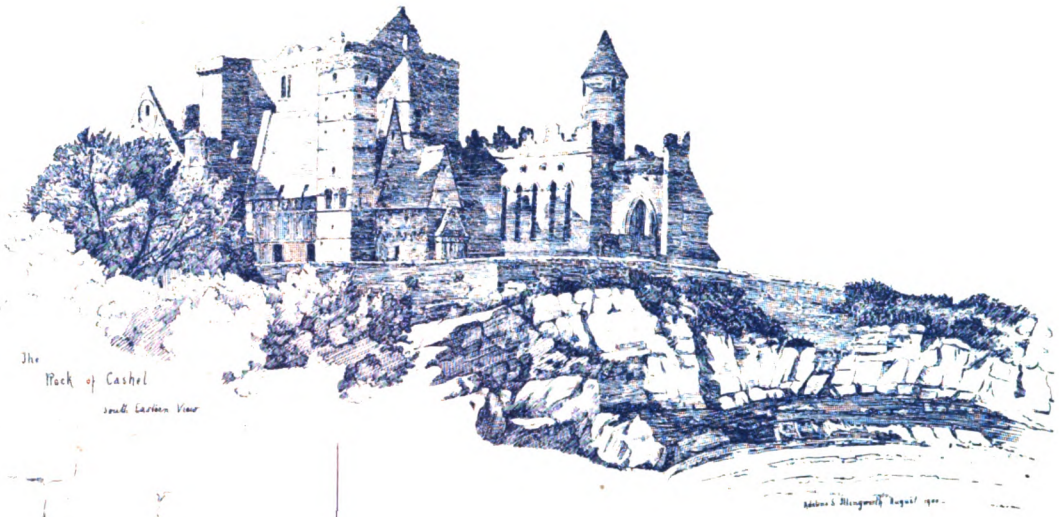

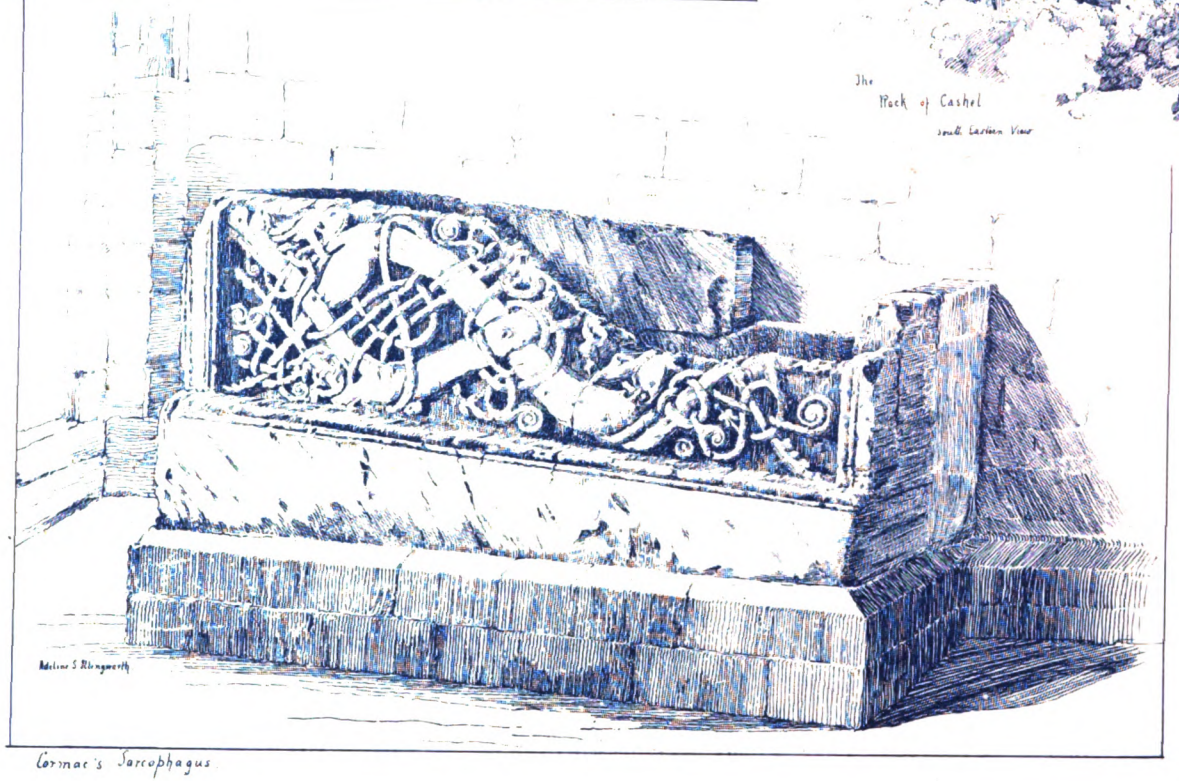

Cormac's Sarcophagus

IRISH SKETCHES. 2.

By ADELINE S. ILLINGWORTH

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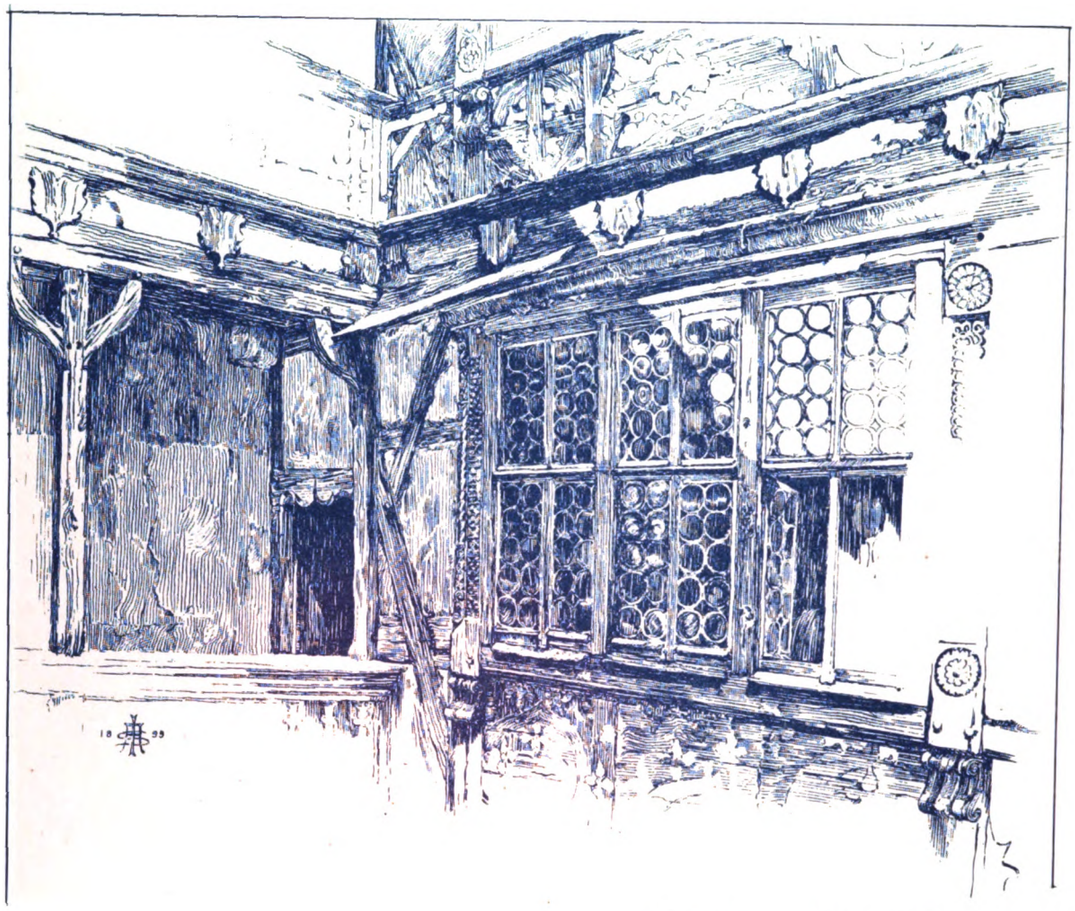

In the courtyard of the architects house.

ST JAMES CHURCH from the KLINGEN STRASSE.

ROTHENBURG SKETCHES I

By ADELINE S. ILLINGWORTH

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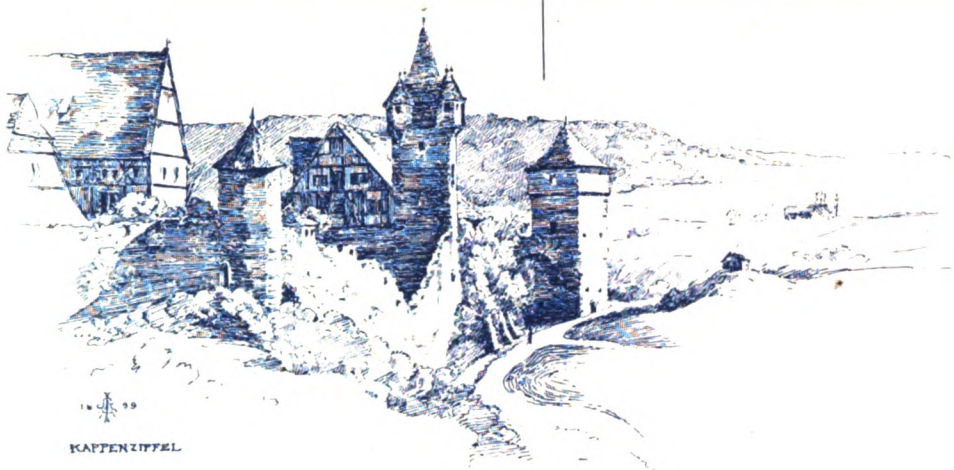
ST JAMES'S CHURCH



KAPPENZIPFEL

THE KLINGEN GATE
ST. WOLFGANG'S CHURCH THRO' ARCHWAY

ROTHENBURG SKETCHES.2.
BY ADELINE S. ILLINGWORTH.

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modern college. The buildings were the resting place for pilgrims and wandering students. Laid about a quadrangle, with a chapel at one side, the resemblance to our colleges is striking, though everything is rougher and simpler, as became a troubled land. Behind the court is a garden, green and shaded, with the town wall secluding it from the world. From the five-pointed tower which rises from this peaceful corner spreads the most beautiful view of the town as it sits enthroned on the valley edge. Gables, pinnacles, and towers pile up against the sky—a fairy town, indeed. The Rathhaus tower and front stands proud above the roofs, and the mass of the church crouches over all, as though mothering the brood of houses where dwell her parishioners. Of a peaceful morning, when the music blows from the Rathhaus tower, and comes echoing back from the valley, all the world seems hedged in our horizon; troubles, and the tide of progress and creation beyond the border-line of hills, seem far away and uncertain.

OUR ILLUSTRATIONS.

SKETCHES IN ROTHENBERG AND IN IRELAND.

BY ADELINE S. ILLINGWORTH.

THE interesting and clever pen-and-ink sketches we publish this week are by Miss Adeline S. Illingworth, 14, Glebe Place, S.W. Some notes on Rothenberg, by Mr. William F. Hubbard, which we publish elsewhere in our present issue, will give added interest to Miss Illingworth's sketches. As regards the sketches in Cashel, Ireland, we cannot do better than quote the following from "Black's Guide":—

"The town of Cashel was once the residence of the kings of Munster, but is now a place of little note save for its proximity to the most remarkable and interesting combination of ruins in Ireland. *The Rock of Cashel*, which is crowned with ancient remains, was in the middle ages the habitation of the chiefs of the *Magh Feimin*, afterwards known as the *Macarthys*, hereditary chiefs of this district. The country round is a rich and extensive plain, out of which the rock of Cashel rises with great boldness and abruptness. It contains on its summit a magnificent assemblage of ruins, which, 'though roofless and windowless, and greatly shattered, still stand up in almost their original height from their splendid platform.' They consist of a cathedral, a chapel, a palace, an ancient ecclesiastical domestic building called the 'Vicar's choral-house,' a round tower, and a great stone cross. The most ancient of these are the round tower and the chapel, which is ascribed to Cormac MacCullinan, 'at once king and archbishop of Cashel.' Cormac was born in 837, and spent the early, and indeed the greater part of his life in a monastery, where, about the year 900, he composed the celebrated '*Psalter of Cashel*,' and a history of Ireland written in the Irish language. He was nearly seventy years of age before coming to the throne, and soon became entangled in war with the monarch Flan, which resulted in his own death in the year 908, after a troubled reign of five years.

"The chapel is built of hewn stone—'both walls and roof, the sides or legs of which are tangents to a counter-arch, springing from the inner part of the walls. The doorway is in the Saxon style, which pervades also the other parts of the chapel, and is adorned with zig-zag and bead ornaments. Above the archway of one of its portals is the effigy of an archer in the act of shooting at an ideal animal. The ceiling or roof is of stone, groined, with square ribs springing from stunted Saxon pillars, with enriched capitals. There is one rich Saxon arch, ornamented with grotesque heads of men and animals, placed at intervals all round from the base upwards; and a second arch within the chancel, probably intended to receive the altar. The walls are relieved by pilasters and panelled arcades. The pilasters of these arcades are highly ornamented with fret and scroll work. As it is, few could credit the elaborate beauty and magnificence evidenced by these walls. The existence of a stone roof has tended wonderfully to preserve from decay the carvings on the arches and capitals.

"The cathedral, built in the pointed style, is of a later date. In the year 1495 the turbulent Earl of Kildare desiring to destroy Archbishop Creagh, set fire to the cathedral. It is recorded that—'He readily confessed his guilt, and added "that he never would have done it, but that he thought the archbishop was within at the time." The candour and simplicity of his confession convinced King Henry that he could not be capable of the intrigues and duplicity with which he was charged; and when the Bishop of Meath concluded the last article of the impeachment with the remarkable words, "You see all Ireland cannot rule this gentleman," the King instantly replied, "Then he shall rule all Ireland," and forthwith appointed him to the lord-lieutenancy of that kingdom.'

"The cathedral is a conspicuous object for many miles round. Divine service continued to be performed within it until the time of Archbishop Price, who in 1752 removed the roof from the choir, and converted the whole into a ruin. The measurement of the cathedral from east to west is stated to be about 200 ft.

"The round tower, like most others, has no written history. It stands in close connection with the cathedral, from which there is a communication opened through the solid masonry of the tower, at a height of upwards of 20 ft. from the ground. The round tower is 90 ft. high, and 'it is curiously indicative of its distinct origin from that of the other buildings on the rock, that it is built of an entirely different stone, the tower being sandstone, while the castle and church are of limestone. Doubtless it stood solitary here for generations, perhaps for ages, before the rock of Cashel was made the abode of St. Mary's monks, or the fortress of the kings of Munster.'* The castle which adjoins the cathedral appears to have been a place of great strength, the very beau-ideal of a feudal hold. 'The city,' says Seward, 'was originally surrounded by a wall, which, though now mouldering, seems to have been of better materials than the generality of such enclosures; two gates are still remaining of tolerable workmanship.' In 1647 Lord Inchiquin stormed the rock, and put to death all the clergy he could find. A stone is pointed out to the visitor a little way from the round tower, which is said to be that on which the Irish Kings were crowned. Tradition states that the original coronation stone, which had the power of uttering a groan when pressed by a royal personage, was lent to Fergus, King of Albanian Scots, for his coronation, and never returned to Ireland. The Scottish throne-stone was conveyed to England, and placed in Westminster, where it is used at the coronation of the British sovereigns."

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE R.I.B.A. elections at the meeting on Monday evening last resulted as follows:—

President: William Emerson.

Vice-Presidents: John Belcher, A.R.A.; Thomas Edward Collcutt; John Slater, B.A. Lond.

Honorary Secretary: Alexander Graham, F.S.A.

Members of Council: Frank Thomas Baggallay; George Frederick Bodley, A.R.A., F.S.A.; William Douglas Caröe, M.A. Cantab., F.S.A.; William Milner Fawcett, M.A. Cantab., F.S.A., Past Vice-President (Cambridge); Ernest George, Past Vice-President; John Alfred Gotch, F.S.A. (Kettering); George Enoch Grayson (Liverpool); Edward Augustus Gruning, Past Vice-President; Edwin Thomas Hall; Henry Thomas Hare; Edward William Mountford; Professor Beresford Pite; George Halford Fellowes Prynne; Percival Gordon Smith; Leonard Stokes; Richard Phenè Spiers, F.S.A.; Paul Waterhoue, M.A. Oxon.; Aston Webb, A.R.A., F.S.A., Past Vice-President.

Associate-Members of Council: Robert Shekleton Balfour; William Henry Bidlake, M.A. Cantab., Birmingham; James Sivewright Gibson; Henry Vaughan Lanchester.

Representatives of Allied Societies: John James Burnet, A.R.S.A. (Glasgow Institute of Architects); Frank Caws (Northern Architectural Association); Charles Henry Channon (York Architectural Society); Arthur Clyne (Aberdeen Society of Architects); Sir Thomas Drew P.R.H.A. (Royal Institute of the Architects of Ireland); Francis Haslam Oldham (Manchester Society of Architects); Samuel Perkins Pick (Leicester and Leicestershire Society of Architects); Frank William Wills (Bristol

* Sir John Forbes.

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Society of Architects); Butler Wilson (Leeds and Yorkshire Architectural Society).

Representative of the Architectural Association, London: William Howard Seth-Smith, Fellow.

DEVON AND EXETER ARCHITECTURAL SOCIETY.

THE annual meeting of the Devon and Exeter Architectural Society was held at Plymouth on Saturday, 1st inst. The president, Mr. C. J. Tait, occupied the chair; there were also present Messrs. H. G. Luff, Charles King, Edmund Sedding, Mr. Alton Bazeley, A. S. Parker, Octavius Ralling, B. F. Shires, A. Heath, W. W. Hitchins, S. Griffin, A. E. Lethbridge, E. Coath Adams, R. A. Mill, A. Tucker, Harold Watts, G. Murray, and Harbottle Reed (hon. secretary.)

It was resolved that a subscription of three guineas, and a donation of two guineas, be made in response to the special appeal for the Architects' Benevolent Fund.

The retiring president (Mr. Tait), then delivered his valedictory address, in which he referred to the progress of architectural art during Queen Victoria's reign, and also to the competitions for the Strand frontages, and the Victoria Memorial. He was afterwards accorded a vote of thanks for same.

The election of officers for the next session resulted as follows: President, H. G. Luff; vice-president, John M. Finn; hon. secretary, Harbottle Reed; hon. treasurer, Octavius Ralling; Mr. Alton Bazeley, Mr. Charles Cole, and C. E. Ware, were elected members of the Council. Mr. Ralling gave notice that he would move that the hon. secretary of the Three Towns branch be *ex officio* member of the Council. Votes of thanks were given to Mr. Tait, Mr. Reed, and Mr. Ralling, for their services in the past year.

THE SURVEYORS' INSTITUTION.

THE annual general meeting of this Institution was held on Monday last. Sir John F. Rolleston, M.P., the president-elect, occupied the chair in the absence, through illness, of Mr. John Shaw, the retiring president.

The annual report read by Mr. Rogers, the secretary, stated that the Institution now, probably, included in its list of members most of the surveyors of standing in the United Kingdom, and it had a total in the various classes of 3,200 compared with 3,096 a year ago. The total investments, calculated at current prices, represented a sum of £13,724 19s. Of 142 candidates who sat for the last preliminary examinations 111 passed, and 362 who went up for the different professional examinations 246 passed. As was the case last year professional examinations were held contemporaneously with the English examinations both in Scotland and in Dublin. The cost of the construction of the new premises was £30,337, to which had to be added architect's commission, law charges, &c., making a total of £34,198, while the outlay on new furniture and fittings amounted approximately to a sum of £1,000. The whole outlay had been met out of the accumulated funds, and no debt whatever remained upon the building. There had been large additions to the library during the year, and a further outlay would shortly be made on the purchase of books. The present number of volumes was approximately 8,000. During the session the council had promised financial support to, and had nominated two of their members to act on a joint committee of the Surveyors' Institution and the Royal Institute of British Architects, appointed for the purpose of collecting and tabulating information from all parts of the country as to damage to buildings resulting from lightning, to discover, if possible, how far buildings were rendered lightning-proof by modern systems of protection, and to ascertain what improved methods might be adopted. The council also decided during the session to co-operate with the Royal Institute of British Architects on a joint committee with reference to the amendment of the law and practice as to ancient lights. The committee had since decided to draft a Bill for introduction into Parliament.

Mr. E. H. Blake formally moved, and Mr. M. P. Holmes seconded, the adoption of the report, which was agreed to.

The chairman, replying to a vote of thanks passed to the late president and members of the council, said the council was representative of the various branches of the profession. While regretting the retiring president's absence and its cause, he thanked them for the honour they had conferred upon him in electing him as his successor.

The chairman was then invested with the president's chain of office, and he afterwards presented the prizes gained during the past session. The principal award—the "Penfold" gold medal—went to William Edward Trent, who, in the building sub-division of Division IV., headed the list of Fellowship candidates with a total of 802 out of a possible 1,000 marks.

THE FIRE RISKS AT THE NATIONAL GALLERY.

AN American expert's opinion upon the fire risks at the National Gallery is given by Mr. M. H. Spielmann in the course of a letter to the *Times* on the subject. Mr. Spielmann writes:—

"A few months ago I received a communication from Mr. Edward Atkinson, President of the Boston Manufacturers' Mutual Fire Insurance Company (U.S.A.), informing me that he had instructed his representative and fire expert, Mr. Sherman, to come to London from Liverpool in order to examine the actual situation and surroundings of the National Gallery, and to report to him. I accordingly met Mr. Sherman, who made an exhaustive examination, and in due course Mr. Atkinson drew up the following report. I hope, Sir, that Mr. Atkinson's authoritative position and high reputation as a fire expert (which are acknowledged in this country as well as in America) will ensure for this report the attention it deserves. He says:—

"'The destruction of the National Gallery, or its serious injury, would be regarded as great a calamity by the English-speaking people on this side of the Atlantic as in the mother country. I am familiar with the surroundings and had taken note of some of the details from your letter in the London *Times*. It happened, however, that one of my long-time associates in developing the science of preventing loss by fire in this country, Mr. W. F. Sherman, was in England. I therefore requested him to make a survey of the premises. His report discloses very great and entirely remediable dangers.

"'1. In respect to the building itself. Windows guarded by iron shutters are not considered safe by us. The iron warps and twists at a moderate degree of heat, keeping the firemen out of the building and letting the fire in.

"'2. A monitor roof with many windows like that upon the top of the old part of the Gallery is very hazardous, especially when dominated by a dangerous and combustible building higher than the Gallery itself. Shutters would serve but little to protect the windows in this monitor, even if they were of the latest and most improved type—namely, of wood faced on each side with Sackett Wall Board and then enclosed in metal; the Sackett Wall Board being one of the most perfect fire retardents yet invented, composed of alternate thicknesses of felt and magnesia plaster.

"'3. The lead roofing of this building would not be tolerated longer than the time necessary to substitute a safe roofing, which on such a building ought to be of copper. In case this building should be dominated by a fire in the next block the lead would melt, endangering the roof beneath and preventing the effective service of the firemen in their efforts to get to the roof.

"'But these dangers are aggravated by the bad neighbourhood. It may be assumed that the old infantry barracks will be removed. But the large building (Hampton's, etc.), occupied for various purposes in the distribution of very combustible goods, will be a menace to the National Gallery. Even if a passage-way 40 ft. wide should be cut through, that block will dominate the building, and in case of its being on fire the damage inside the Gallery may be very great. In a recent instance in the city of New York the burning of a building occupied

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in a similar way next to a high and so-called fire-proof building greatly injured the walls and, passing by unguarded windows, destroyed the contents of the upper storeys. There can be no permanent safety to the National Gallery unless that dangerous building is removed and the whole square (*i.e.*, plot of ground) devoted to the purpose of the Gallery, which it now so largely occupies.

"'You are at liberty to make what use of this letter that may be deemed suitable. To a few persons in London my authority as an expert in the science of preventing loss by fire will be known, and I do not hesitate to use such influence as I may be entitled to in aiding you to defend the National Gallery from all remediable causes of loss by fire.'

"I may add that when in course of conversation I asked Mr. Sherman what premium he would recommend his company to charge were it sought to insure the National Gallery, he promptly replied that he would report dead against the risk, for if once the barracks or Hampton's were well alight the National Gallery risk would not be worth five shillings. 'I don't see how you could save it.' I would remind you that these gentlemen are American experts, who have no interest whatever in raising an unwarrantable scare."

THE EXHIBITION OF WORKS IN WOOD AT THE CARPENTERS' HALL.

AMONGST the interesting items in the loan collection of this Exhibition, held in Carpenters' Hall at the beginning of the week under the auspices of the Worshipful Company of Carpenters, were a number of ancient miserere carvings in oak, lent by Messrs. Harry Hems & Sons, of Exeter. Eight of these were good specimens of very early 15th century work—most effectively carved and originally in the Choir of the Collegiate Church of St. Michael at North Cadbury, near Castle Cary, in Somersetshire. They were removed from there—apparently without rhyme or reason some 60 years ago—at the same time, probably, as the old rood screen.

Another of the series was altogether unique in the Exhibition, and was far the oldest example of carved oak there. This miserere dates from early in the 13th century, and is one of the 50 (all still preserved) made at the instance of Bishop Bluere, who ruled the See of Exeter from April 1224 to 1244. During the renovation of Exeter Cathedral in the seventies the stalls were remodelled and made one less than before. Hence, whilst 49 of Bruere's misereres still do duty, this one was turned out, and has been preserved in the Chapter House ever since. Messrs. Hems & Sons were enabled to exhibit it through the courtesy of the Dean and Chapter of Exeter. When one tries to realise this graceful specimen of carved oak was made some 770 years ago, and until recently has been in daily use ever since, one finds a practical object lesson before them, illustrative of the everlasting qualities of English oak. Messrs. Hems and Sons also contributed to the collection an old iron fret saw frame, which appears to have been in use ever since A.D. 1593, the date it bears, stamped in quaint characters upon the metal work. It also has the initials "W. B." stamped upon it.

It is of interest to record the fact that three of the apprentices of Messrs. Hems & Sons were successful competitors for the annual prizes offered in connection with this exhibition. Thomas M. Butcher, wood carver, aged 17, in Division V., Class 7, takes the first prize, silver medal and £5, for a particularly clever statuette in oak, two feet high, representing Prince William of Orange in the costume he wore when passing through Eccles in 1688, just after first landing at Brixham. Fred George Knapp, a youth of the same age, in Division VI., Class 3, was awarded the first prize and £2 offered competitors under 18 years of age, for three well-designed and equally well-carved pateræ of Perpendicular Gothic design. In Division IV., Class 2, Joseph B. Hoskins, a young apprentice to the joinery, takes the second prize and bronze medal for a well-made library arm-chair of oak.

BERLIN INTERNATIONAL FIRE EXHIBITION.

THE attention of the British Fire Prevention Committee having been called to the fact that the curious lack of enterprise on the part of the English fireproofing and fire appliance trade had resulted in this country being scarcely represented at the Berlin International Fire Exhibition, steps have now been taken to see that Great Britain is at least represented by some scientific exhibits. A large stand has, in fact, now been retained by the committee to show photographs, plans, etc., of such materials and systems of construction as have been before the committee for investigation, and a number of models are also being sent to Berlin. Further, some large plans and drawings of London fires are being shown together with a very interesting collection of old insurance plates.

Although the British Fire Prevention Committee has, from patriotic motives, tried to step into the breach at short notice with exhibits arranged from a scientific point of view, the lack of enterprise on the part of the trades concerned is highly regrettable, as the natural result can only be that much of the business to which Great Britain might well lay claim must again drift into the hands of the more energetic foreign competitors, who have taken the pains to show what they can do in meeting the requirements of fire protection. An exhibition of this description has particular influence on visitors from the colonies and from countries such as Russia, Turkey, and the South American Republics, and if individual firms do not see their way to participate in exhibitions, the petty jealousies and rivalries should at least be so far overcome as to allow of an economical "collective" exhibit, so that the credit of our industries is upheld and a loss of trade prestige avoided.

LIVERPOOL DIOCESAN CHURCH HOUSE.

THE Liverpool Diocesan Church House, the first section of which was formally opened on the 21st inst. by the Archbishop of York, is situated at the corner of Lord Street and South John Street, having a frontage to Lord Street of 32 ft.; to South John Street of 141 ft.; and to Cable Street of 71 ft.; and the purchase price of the site, together with the buildings thereon, was £50,000. It was not, however found possible to carry out the scheme in its entirety at once, so it was decided to erect the first section at an expenditure of £15,000, to clear the debt on which portion £2,000 is required, leaving a sum of £25,000 to be raised for the erection of the second section.

The buildings have been designed by Mr. George Bradbury, the diocesan surveyor, and a conspicious feature of the completed portion is the tower. The exterior of the building is constructed entirely of red Ruabon brick, with terra cotta facings, and entrance is obtained by a wide vestibule and hall in South John Street. On the first floor, reached by a wide staircase, are the rooms of the Diocesan Finance Association, the board room where the Consistory Court—previously held in St. Nicholas Church—and all diocesan meetings will be held. The fittings in the latter are of oak, with the diocesan arms carved over the mantelpiece, while the desk and furniture are those which did duty in the Corporation Council Chamber before it was altered and enlarged. On the opposite side of the landing is a small newsroom and a tearoom for the use of lady members. The Diocesan Sunday School Institute rooms are situated on the second floor, together with the clerical library, the Sunday school teachers' library, a suite of rooms occupied by the diocesan solicitors, and an apartment adjoining for the private use of the bishop (Dr. Chavasse). The Ryle Library, dedicated to the late Bishop Ryle, who directed by his will that the whole of his nearly 5,000 valuable theological and other works should be devoted thereto, is situated on the third floor. There are also two rooms for use by members for reading and writing, and accommodation for the Church Societies' Depot. The building is heated by means of hot-water pipes, and lighted with electricity.

A HOUSE OF COMMONS Committee have passed a Bill enabling the Brighton Corporation to purchase the aquarium in that town for £30,000.

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TRADE NOTES.

THE Bury Corporation have accepted the tender of Messrs. Goodall, Lamb & Heighway, Limited, of Manchester, for the fittings of the new Bury Art Gallery, for which Messrs. Woodhouse & Willoughby, of Manchester, are the architects. The fittings are to be of oak, and the amount of the tender is £799.

A NEW turret clock striking the hours, and showing time upon two illuminated dials 5 ft. diameter, has just been erected at Foxdale, Isle of Man, as a memorial to our late beloved Queen. The makers are J. B. Joyce & Co., Whitchurch, Shropshire. The same firm have also erected a clock striking the hours and half-hours, and showing time upon one external dial, at the parish church, Weston, near Runcorn; and they have an extra large clock in hand to chime the Cambridge quarters for St. John's Church, Longton, Staffs.; and also an ornamental illuminated bracket clock for Messrs. Elkington's new premises, Liverpool.

ST. ANDREW'S CHURCH, BOSCOMBE, has been ventilated by means of Mackay's patent direct-acting ventilators, supplied by the sole makers, Messrs. Cousland & Mackay, ventilating engineers, Glasgow and Manchester.

JOTTINGS.

THE Sunderland Borough Electrical Engineer reports a profit of £1,257 on the electric light undertaking for the past year.

THE discovery is reported from New York of what is said to be the largest asphalt deposit in the world in the island of Salango, off the coast of Ecuador.

THE Burton Corporation are about to erect a new fire brigade station and depot, at a cost of £10,500. It will occupy a site in New Street, and will face the new post office, which is to be built in the same thoroughfare.

A NEW public hall is being erected at Port Ellen from designs by Messrs. Sydney Mitchell & Wilson of Edinburgh. The hall is being erected as a memorial of his late father by Mr. Ian Ramsay of Kildalton.

THE drainage difficulty at Portsmouth is in a fair way of being settled, as the military and naval authorities have approved the scheme for extending the tanks at Eastney, and have raised no objection to the shore system being adopted for draining the Southsea part of the borough.

A PROMENADE extension is now being made round the Aberystwith Castle promontory at a cost of £13,000. The new promenade will be nearly half a mile in length, and will afford sheltered spots from north or south winds. Public works are now in progress in Aberystwith to the extent of £30,000.

THE new West Promenade at Rhyl, which has been constructed at a cost of between £5,000 and £6,000, and has just been opened to the public provides the missing link wanted to complete a grand circular drive of four miles round the town, and gives a total length of asphalted promenade of two miles and a half, or an acreage of 6¾.

LORD GRIMTHORPE, the octogenarian designer of Big Ben, has just devised a weathercock which works upon a flat piece of agate, and is warranted not to "stick fast" or "squeak," or otherwise misconduct itself. As Lord Grimthorpe never patents any of his inventions, builders of churches can now erect an architectural "finial" possessing the Christian virtues of "sensibility and silence."

S. LUKE'S CHURCH, Bristol Road, Birmingham, is being rebuilt from designs by Mr. Edward Mansell. The new church will accommodate about 8,000 persons and comprises the nave, chancel, and aisles, together with a tower 121 feet high. Advantage has been taken of the slope of the ground to place large class rooms under the chancel and vestries. The cost of the new buildings is expected to be about £13,000.

KYLEMORE CASTLE, the famous Connemara residence of Mr. Mitchell Henry, was put up for sale by auction on the 4th inst. The sale embraced the Kylemore estate, containing 13,000 acres, with grouse moors and fishing grounds. The bidding began at £30,000 and ended with a bid of £33,000. As no higher offer was made the property was withdrawn, Mr. North, the auctioneer, stating that as they had received considerably higher offers it would be sold by private treaty.

WORKMEN employed on Lord Penrhyn's estate were examining a cave on the sea coast near Penrhyn Castle, the other day, when their passage was blocked by a brick wall. After demolishing this obstruction the workmen found several stone steps leading to a large cave, which local archæologists declare to be the one used by Sir Pyrs Griffith, who had the reputation of being a pirate, and who served with the English fleet against the Spanish Armada. Among the curiosities at Penrhyn Castle there is an old Hirlas horn which belonged to Sir Pyrs Griffith.

SYDENHAM WELLS PARK was opened to the public on the 27th inst. The name commemorates some mineral springs, discovered in 1640. More or less fashionable for nearly 200 years they are now forgotten, if ever heard of, by all but a few students of London history. The park has been laid out by the Parks Committee of the County Council, from designs by the department's chief officer (Mr. J. J. Sexby); it has cost over £10,000, without counting the price of a bowling-green and a store-yard yet to be made. Half the money has been paid for the site, the County Council and the Lewisham local authorities contributing equal portions to that item. The area is 17¾ acres.

THE long-delayed inspection of the Evan Fraser Hospital, erected by the Hull Corporation, was made on the 29th ult. by the Sanitary Committee. After lunching with the chairman, Mr. Alderman Evan Fraser, the Committee drove to Sutton, which is about three miles from the centre of the city, and were shown over the hospital by Dr. Fraser. It consists of five pavilions and two convalescent blocks, upon 23 acres of land, affording accommodation for the isolation and treatment of 300 patients, together with accommodation for nurses and attendants. In round figures the hospital cost £20,000. About £11,687 was spent on the buildings, £2,882 for furnishing, £2,827 for drainage and roadmaking, and £19,380 for gas and water mains.

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The British Architect.

LONDON: FRIDAY, JUNE 14, 1901.

AN "UNDERSTUDY" FOR ARCHITECTS.

IN this country the death of the architect of an important public building is a contingency that is usually left to take care of itself. The comparative rarity of such an event has probably made us somewhat heedless of the consequences of it when it does happen. But the deaths of Mr. William Young and Mr. J. M. Brydon occurring as they have done so suddenly, and within such a short time of each other, leaving two important Government buildings to be carried out by other than their authors, raises the question in rather a startling fashion. When Mr. Young died it was arranged that his son should have charge of the work, with the assistance and supervisory care of Mr. Brydon. Now Mr. Brydon is dead, further appointments will have to be made. Who is to take up the work of these two deceased architects and satisfactorily interpret their designs? It might possibly be easy enough to make suggestions, but presumably the President of the Institute of British Architects will be asked to advise in any appointment that may be made. It will be a matter of considerable interest to the profession to know who is to be Mr. Brydon's successor, and whether he is to have the oversight of the War Office building as well.

Should the proper completion of great public monuments be left to chance? This is the question which Professor Aitchison, R.A., asks in the course of an interesting note on the subject. "For many of the buildings that have won the admiration of mankind," he writes, "two architects were employed, to ensure, I suppose, that the approved design might not be lost by the death of its designer. The Parthenon had Ictinus and Kallikrates for its architects. Anthemius, of Tralles, and Isidorus, of Miletus, were the architects of Sta. Sophia, at Constantinople. At St. Peter's Bramante was seconded by B. Peruzzi, and afterwards by Antonio da San Gallo the younger. Raffael had Giuliano da San Gallo and Fra Giocondo as aids, and after their deaths A. da San Gallo the younger was first architect; he had Peruzzi as his second. There was no second architect to Michelangelo, although he had Vignola and Pirro Ligorio as aids. We were lucky in the strength and long life of Wren, who finished our great Protestant Cathedral, and in Sir Charles Barry, who finished the Houses of Parliament; but Elmes, the architect to that triumph of classic architecture St. George's Hall at Liverpool, died before it was finished, though he was fortunate in having so great a master as Professor Cockrell to finish it. But should the proper completion of great public monuments be left to chance? The French Government, I am given to understand, always appoint a first and second architect to all their public buildings, the second being fit to carry out the first architect's design in case of his death."

It certainly would *seem* a reasonable precaution that some such provision should be made in the case of important public buildings, so that in case the deputy were called upon to act he should be familiar with the mind and intentions of the architect whose place he was to take. Thus both the spirit and the letter of the architect's design would have the better chance of due and satisfactory fulfilment. For it must not be forgotten that in the detail even more perhaps than in the general design is the individuality of the architect to be chiefly found. In the late Mr. Brydon's Government Offices, for instance, though we felt somewhat disappointed with the design as a whole, yet we felt sure that he would have given us interesting and clever detail.

As to the advantages to be derived from the provision of such an "understudy" as indicated in cases like those under notice, they are of course strictly limited. They would be felt chiefly by a clever junior who would gain experience, and at a fair rate of payment. No architect of pronounced individuality and position would find much consolation in the carrying out of a design already very fully developed. But we can well imagine that if only the general lines of Mr. Young's and Mr. Brydon's designs were settled, and liberty left for considerable latitude in detail that the carrying out might be attended with very excellent results in the hands of, say Mr. John Belcher, A.R.A., or Messrs. Mountford, Hare, Reginald Blomfield, or H. W. Wills.

INIGO JONES.

NOTHING architectural in the book world has been more completely satisfactory—so far as it goes—than the folio on Inigo Jones, just issued by Mr. Batsford. The title of this admirable work is "Some Architectural Works of Inigo Jones," comprising a series of measured drawings and other illustrations, together with descriptive notes, a biographical sketch, and list of his authentic works. The authors are H. Inigo Triggs, A.R.I.B.A., and Henry Tanner, jun., A.R.I.B.A.

We have just said that this book is satisfactory so far as it goes. At the same time we regret that it did not go a little further. We should have liked to see included in it a series of illustrations of the bulk of Inigo Jones's buildings, which would afford one an idea of the range of his work in its general aspects. Quite small views would have answered this purpose, and excellent as are the measured elevations and details, we should much have liked them supplemented by pictorial records in every case of the complete buildings and interiors. It is of great value to compare work in detail with its general setting and aspect. However, our authors have accomplished their task in a careful and withal concise manner, and have certainly earned the gratitude of their fellow architects for giving so worthy a record of Inigo Jones and his work.

If the qualities which so distinguished this great architect's work were appreciated and studied to some real purpose nowadays we should probably make more progress. As Mr. Reginald Blomfield says in his "Renaissance Architecture in England":—"Inigo Jones's special strength lay in his thorough mastery of proportion, and he was contemptuous of mere prettiness. In his own words we have it that architecture should be solid proportional according to the rules, masculine and unaffected." But after all this sort of feeling takes a great deal of teaching. Raynham Park, Norfolk, is truly refined and accomplished, and contains plenty of evidence of Inigo Jones's skill, but if the student were to overlook this and simply imitate the kind of gables, which to our mind disfigure the house, he would sadly miss the lesson the great architect can teach. With all our admiration for Inigo Jones, we should be sincerely sorry to find English country houses modelled on the severe lines he affected, and to fall back on the type of the later Renaissance. Enough has been done by our best modern architects to prove that this sort of thing is unnecessary.

There is a curious absence of knowledge in the first thirty years of Inigo Jones' career, but he must have had the architectural instinct very strongly developed and have overridden many difficulties and obstacles in his progress. He was evidently a man of enegy and ready to fill up his time with his best available talents in any direction fairly available to them. Born in 1573, the son of a clothworker in West Smithfield, he appears to have been apprenticed to a joiner. He twice visited Italy, and evidently went with seeing eyes, for the bringing back of our English architecture from the oddities of Jacobean to a more classical model seems to have been very largely due to his practice. His design for mosques occupied a large part of his time and efforts, and evinced considerable imaginative power, but his architectural work proper was always kept in strict restraint.

Great and distinguished as Inigo Jones was, we cannot think that he would ever have given us the picturesque and versatile designs we find in Sir Christopher Wren's London towers and spires. But his accomplishment in real architecture was nevertheless one of the most distinguished things in our English history. As Walpole said: "Inigo Jones would save England from the disgrace of not having her representative amongst the Arts. She adopted Holbein and Vandyck, she borrowed Rubens, but she produced Jones." We imagine none of our readers would ever regret the thirty shillings expended on Messrs. Triggs & Tanner's most excellent and interesting record.

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A MODERN VIEW OF LONDON CHURCH ARCHITECTURE.—XX.

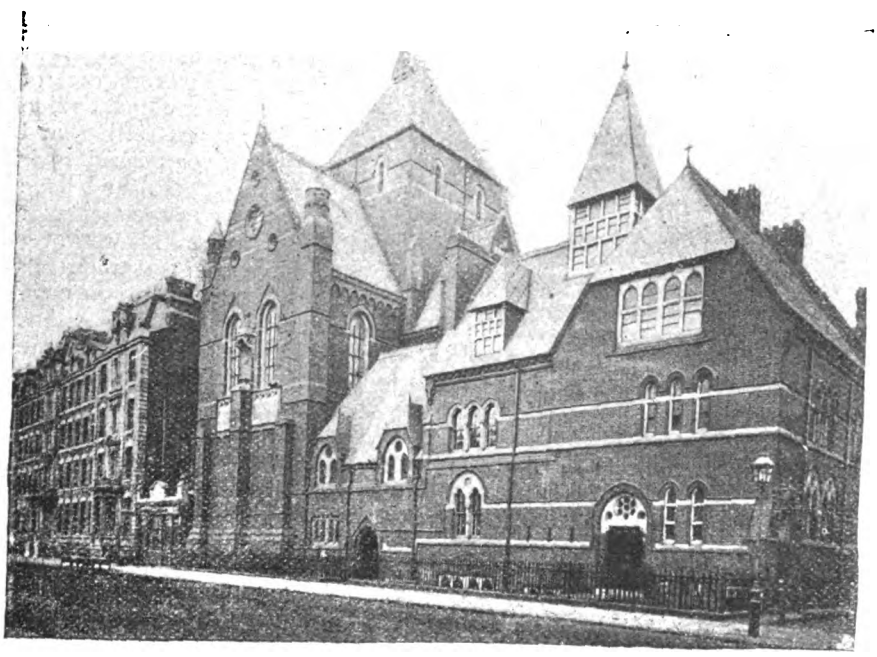
By T. F. BUMPUS.

(*Continued from page* 373.)

THE next church of this group to be commented upon, if taken in strict chronological order, is St. Augustine's, York Street, Hackney Road, consecrated in 1867, but as the remaining two churches of the series by Mr. Brooks—St. Columba's, Kingsland Road, and St. Chad's, Nichols Square—are encountered on the way thither, the description of Mr. Woodyer's strikingly dissimilar, though not less masterly work, may stand over for the present.

St. Columba's and St. Chad's churches, both finished in 1869, have several points in common. It will be convenient, therefore, confining the attention to certain selected and salient features of these buildings, to describe them in face of each other, indicating the points of strong likeness and equally strong dissimilarity existing between them.

The most noticeable points of resemblance in these two churches are their construction of red brick—to the exigencies of which material their design is in every respect subordinated—and their style, which belongs to that school of Early Pointed as developed during the first quarter of the Thirteenth Century in North-eastern France.



ST. COLUMBA'S, KINGSLAND ROAD, FROM N.E.
(*Jas. Brooks, Architect, 1867-69*).

Both St. Chad's and St. Columba's are cruciform, but as their transepts have no projection beyond the line of the aisles, neither church appears so in the ground plan.

Externally this is no detriment to the general effect, the transepts being sufficiently long to ensure an air of simple quiet dignity, while interiorly they constitute an element of grandeur without appearing mere useless excrescences as too many transepts in churches of the revival do when introduced for mere picturesqueness sake, and in slavish imitation of ancient models.

The cross form has, however, been differently worked out in the two churches under review.

At St. Columba's the crux is groined for a central tower, which, as will be seen from the accompanying view, rises but little above the roofs at present. Here the four tower arches carried on slender banded shafts, constitute a most imposing internal feature, absent however at St. Chad's, where provision is made for the bell at the intersection of the four limbs in a timber turret of very open character, with a pyramidal slate capping. Here, the extreme awkwardness attendant upon roofing the crux, when the central tower is absent, no doubt led Mr. Brooks to mimimise this church's cruciform character by prolonging the nave roof—polygonal and boarded, with projecting ribs running down the walls at intervals in a not very graceful fashion—across his transepts, but allowing them to open into the nave by arches reaching almost to the top of the clerestory.

The two-bayed chancel of St. Chad's terminates in a semi-circular apse of great beauty, the whole being vaulted in red brick. At St. Columba's—the most noble and imposing of this group of churches—the tower forms the chancel, the eastern limb which abuts so grandly upon the Kingsland Road, constituting a spacious sanctuary. This is square-ended, but the architect by giving its brick-vaulting a double cell, and by causing its ribs to start from a slender shaft between the two eastern lancets, has imparted a quasi apsidal form to this part of the church—treatment which may have been dictated to its designer by St. Cross, Winchester, or St. Honorine at Graville, near Havre. The li-erne vaulting of the chancels in both these North-east London churches is very peculiar, resembling the ancient examples above quoted in that carrying out the idea of stilting, the architect has not commenced his vaulting till a height of from 10 feet to 15 feet above the wall-plate is attained, thus gaining so much additional height to the eastern limb. To counteract the thrust of this vaulting thickness of walling is alone relied upon, no buttresses being used either to chancel or nave, even in cases where, as at St. Columba's, ample unoccupied space exists on the site, and where many practitioners would have preferred to break up the long unpierced aisle walls in this manner. The form of vaulting used in both these churches requiring but little centering, there is a considerable saving in the cost of groining, and, the face of the spandrels being, as observed just now at St. Columba's, slightly curved, each course of bricks forms a kind of arch from rib to rib.

At St. Columba's the extremely domical section of the sanctuary vaulting has the effect of causing the central boss to totally disappear when the visitor is but a little way down the nave, and this taken in conjuction with the size of the cells has no small share in diminishing the appearance of length about this limb of the church. Here the whole of the space eastward of the nave is groined, the transept roofs assuming the barrel shape with stone ribs sprung from slender attached shafts. Of great grace is the vaulting of the south chancel aisle at St. Chad's which, terminating in an apse, constitutes a spacious chapel for the daily offices. This, one of the earliest examples of a most useful, and at the present day so widely employed, appendage to a large town church, does not appear at St. Columba's, which from its size would appear to have felt its want more; but conditions of site stood in the way of its provision. Here a chapel of exceedingly restricted dimensions has been evolved out of the space beneath the organ loft in the south transept, but this having been felt inadequate to parochial needs, a third altar has been set up at the south-west end of the nave immediately opposite the principal entrance to the church which is through a very lofty vaulted porch projecting northward from the western bay of the nave. Assuming a transeptal character, this feature not only breaks up the long line of the church very agreeably outside, but serving the purpose of a baptistery, forms a really noble approach to the interior, creating that effect of space at the western extremity which in a town church is so desirable, both from a utilitarian and an artistic point of view. St. Chad's is entered from the west end by a lean-to narthex, the internal doors being placed north and south, and the western wall being relieved by small foliated circles glazed. The trellis-like brick ornamentation of the north wall in the western transept of St. Columba's should be especially noted.

We now come to that feature which lends such character to a church's interior—the nave arcade. That of St. Chad's is very similar in its constructional character to St. Saviour's, Hoxton, the inner order of the three arches composing it being of stone and the outer of brick, but the effect, from the presence of dripstones, is more pleasing than in the earlier church. The columns, very stunted cylinders with narrow capitals, even now in the block, appear crushed beneath the superincumbent weight, but this unpleasant impression will doubtless vanish when their

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sculpture has been taken in hand. The two arches opening into the chancel aisles are entirely of stone, and spring from a stout circular shaft with a carved cap, and just at their springing occurs a strange square block with an incised cross on each face, the effect of which, although singular, is far from unpleasing. At St. Columba's the five nave arches are moulded entirely in red brick, stone, however, being used for the dripstones. They are most graceful, and accord very happily with the stone piers, which are of the compound type—four slender shafts disposed around a cylinder, but just detached from it, and with the connecting bands cut from a single stone. Particularly graceful is the effect of the most westernly bay on the north side, surmounted by an unglazed window, corresponding with the clerestory, and looking into the transeptal narthex above alluded to. The responds of the arcade at St. Columba's, it should be noted, are of red brick, crossed between the rings connecting the core with the small shafts by stone bands—treatment undoubtedly pretty, and, thirty years ago, novel. In both churches the nave aisles are destitute of windows. At St. Columba's they are

ST. CHAD'S, HAGGERSTON, FROM THE N.E.
(*Jas. Brooks, Architect, 1868-69*).

spanned at intervals by half-arches of brick brought down upon corbels, so as to space out panels destined for pictorial enrichment. Both churches, therefore, are dependent for light upon their west ends and their ample clerestories. The west end of St. Columba's is an exceedingly grand composition in two stories, there being five lancets in the lower tier and three in the upper, surmounted by a small rose, the whole fenestration reminding one of Yorkshire thirteenth century work.

St. Chad's has above its western narthex a couple of large windows, each composed of two plate-traceried lancets and a foliated circle, the same type of window serving for the clerestory of both churches. A strange feature occurs at St. Chad's; the four groups of clerestory lights not ranging with the voids or supports of the three bays below: but the effect is far from unpleasing. For either transept at St. Chad's Mr. Brooks has employed a triplet of lancets surmounted by a plate-traceried rose, while in the northern arm of St. Columba's a rose is placed above three two-light windows, miniatures of those in the clerestory. Throughout the chancel of both churches the large single lancet prevails. Of these there are nine in the clerestory of St. Chad's, the three occurring in the apse being filled with remarkably good stained glass by Clayton and Bell. The Session in Majesty in the central window was in position at the completion of the church in April, 1869; the effigy of the Blessed Virgin to the left—inserted by the Marys of England in response to an invitation from the daughter of the church's late venerable Vicar, Rev. W. R. Sharpe—being somewhat later; while the figure of St. Chad in the right hand lancet is a work of two and twenty years ago. All however, accord very happily in tincture with each other, and the effect of these three large striking figures is perhaps superior to that which would have been obtained from a multiplicity of small subjects treated medallion wise. There is also some excellent work by the same artists in the side chapel in the north chancel aisle behind the organ, and in the western lancet of either aisle. That in the transeptal lancets is hardly so satisfactory.

(*To be continued.*)

NOTES ON CURRENT EVENTS.

IT appears we were in error last week in stating that the Hereford municipal buildings' competitive designs were under consideration. The date for sending in the designs was extended to the 7th of July, so that, of course, this statement could not possibly be true. We were misled by a statement in a local paper to the effect that there were 45 competitors, and that the designs were under consideration.

THE competition for public baths for the Urban District Council of Stretford (Manchester), has been settled as follows:—First premium of 30 guineas to Charles Thomas Taylor, A.R.I.B.A., 10, Clegg Street, Oldham, and Albert Warburton, A.R.I.B.A., 11, Lyme Street Chambers, Warrington, under motto "Aqua Pura." Second premium 20 guineas to Arthur R. Groome, A.R.I.B.A., 2, St. Peter's Square, Manchester, under motto "Lux." Third premium of 10 guineas to Farrar & Woodhouse, Oxford Street, Manchester, under motto "Economy No. 1." The design of Messrs. Farrar & Woodhouse has been adopted by the council as the one most suited to its requirements, and will accordingly be proceeded with. The designs are on view at the Technical Institute, Old Trafford, on the 14th, 15th, and 17th inst.

IN the Keighley Free Library Competition there were 146 designs submitted, and the assessor (Mr. Leonard Stokes, F.R.I.B.A.) awarded the premiums as follows:—(1st) Messrs. McKewan & Swan, 3, Newhall Street, Birmingham; (2nd) James S. Gibson, 4, Gray's Inn Square, London, W.C.; (3rd) Thomas Davidson, 28, Great Ormond Street, London, W.C.

FIFTY-FIVE sets of designs were received in the competition for a board school, to accommodate 1,200 children, for the Gillingham and Grange U.D. School Board, and which is to be erected in Richmond Road, New Brompton. One premium of £10, and three of £5 each, were offered. In the result Mr. J. D. Pearson (27, Chancery Lane, E.C.) received the £10 premium, and was appointed architect to carry out the work. The other three premiums were awarded to Messrs. Newton, Son, and Lawson 14, Victoria Street, Morecambe, Messrs. Greenhalgh & Brockbank, Broad Street House, London, E.C., and Mr. F. M. Kirby, Greenhithe, Kent.

COMPETITIVE designs are invited for the laying out of grounds on the Western promenade at Penzance. The total cost is not to exceed £7,000, and the Corporation state: "A premium of £21 will be awarded for the best design and £10 10s. for the next best, such plans to become the property of the Corporation. The premium for the selected plan to merge in the author's commission. In the event of the Corporation being unable to find a contractor to carry out the works for the sum estimated by the author, any premium that may have been awarded shall be cancelled." A deposit of 10s. 6d. is required for the plan of site and particulars, which are to be had from the borough surveyor, Mr. Frank Latham.

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THE Corporation of Hamilton (Scotland) invite competitive designs for the widening of Cadzow Bridge. Premiums of fifteen guineas and ten guineas are offered for the two designs which are placed second and third in order of merit, whilst "if no plan is accepted these sums will be awarded to the first and second respectively."

THE prizes offered by the Architectural Association of Ireland for competition amongst students have been awarded as follows:—The A. A. Travelling Studentship, value ten guineas, Mr. J. A. Rockett. The Royal Institute of Architects of Ireland prize of ten guineas for the best design for a technical school, Mr. C. P. Powell. Prize of two guineas offered by Mr. W. F. Beckett for best sketch of the campanile in Trinity College, Mr. L. O'Callaghan.

IN a competition for plans for the Colwick, Gedling and Burton Joyce sewerage, the assessor has awarded the first premium of 45 guineas to Messrs. Haller & Machell, of Dewsbury, and the second one of 20 guineas to Mr. J. R. Elliott, C.E., of Nottingham.

THE officers and committee elected at the last meeting of the Architectural Association of Ireland, for the session 1901-1902, are as follows:—President, Mr. C. J. McCarthy; vice-presidents, Mr. T. E. Hudman and Mr. E. P. Sheridan; committee, Messrs. H. Allberry, F. Batchelor, R. M. Butler, T. Coleman, F. G. Hicks, J. Holloway, C. H. Mitchell, L. O'Callaghan, R. C. Orpen; hon. treasurer, Mr. J. H. Webb; hon. librarian, Mr. J. Geoghegan; hon. secretaries, Messrs. E. Bradbury and G. F. Beckett; hon. auditors, Messrs. M. J. Buckley and J. P. McGrath.

PROFESSOR W. R. LETHABY is to read a paper at the meeting of the Royal Institute of British Architects on Monday evening next (the 17th inst.) on "Education in Building."

MR. W. Q. ORCHARDSON, R.A., has been elected a Foreign Associate of the French Academy of Fine Arts as successor to M. Broszik. Since 1895 he has been a correspondent of the Academy. Mr. Orchardson was awarded a Grand Prize and Gold Medal at last year's Paris Exhibition.

THE death is announced from Basle, at the age of 51, of Hans Sandretuer, the pupil of the artist Boecklin. He chiefly painted landscapes in the Jura and the Black Forest. Two Rhine views by him are now at the Paris Salon.

THE death is announced from New York of Mr. Edward Moran, the well-known painter.

IT is stated "on the highest authority"; by the *Westminster Gazette*, that Gainsborough's "Duchess of Devonshire" will remain in London. It will continue to hang in Mr. Pierpont Morgan's town house along with his other valuable pictures. In all probability the picture will be lent by Mr. Morgan to one of the galleries for exhibition in the autumn.

AMONGST the modern pictures and drawings disposed of at Christie's on Saturday the most notable lots were:—"The Acropolis," by W. Muller (sold in 1887 for 760 guineas), 400 guineas; "Crossing the Ford," by B. Foster, 330 guineas; "Portrait of a Lady in White," by J. Downman, 300 guineas; and "The End of November," by T. S. Cooper (sold in 1877 for 650 guineas), 250 guineas.

MR. PIERPONT MORGAN'S latest acquisition is an artistic one. According to the *New York Herald* the Marquis de Balleroy has just sold to Mr. J. Pierpont Morgan the four famous tapestries, with subjects after Boucher, which have long been at the Chateau de Balleroy. The price paid is stated to be 2,000,000f.

THE Bishop Creighton Memorial Committee are making special efforts to obtain sufficient funds for the two portraits of the Bishop for Fulham Palace and the National Portrait Gallery.

SOME £20,000 is to be expended upon the renovation and extension of Northampton Infirmary. The scheme provides for the building of a home for the nurses, who are now housed in rooms at the end of the wards, and a complete renewal of the sanitary arrangements. Many of the walls are to be rebuilt, floors are to be relaid, and the whole of the ventilation is to be replaced by a better system.

IT was decided at a public meeting of churchmen, held at Peterborough on Tuesday, to complete the restoration of the west front of the cathedral, as a memorial to the late Dean Ingram, who strove so strenuously to finish the work. The work is estimated to cost £2,000.

THE announcement that Battle Abbey is "in the market" will doubtless excite public interest considerably. One can only hope that national interest will be so far aroused as to render it impossible for so historic a remnant of Early English history to be knocked down to the highest bidder.

THE speculating builder is soon to convert Marble Hill at Twickenham, once the home of Pope's "Chloe," into a choice little area of suburban villas. "Chloe" was Mrs. Henrietta Howard, afterwards Countess of Suffolk. Pope, who, we are told, was her near neighbour and good friend, helped her to lay out the grounds.

MORE curiosities in inn signs. "The Quiet Woman" is a public house at Hanley, and this novelty in womankind was represented by the picture of a female without a head. Another inn sign had "The First In" on one side and "The Last Out" on the other. A public house near Shrewsbury called "The Robin Hood" we remember had two lines of doggerel to this effect:—

"Robin Hood is dead and gone,
Step in and drink with Little John"—

possibly an allusion to the landlord whose Christian name was John. Two women washing a negro in a tub was the pictorial embellishment of an inn sign at Doncaster, illustrative of the appropriate title, "Labour in Vain."

BUT one of the most amusing stories of curious inn signs is surely that associated with the name of the Bishop of Llandaff, as told in the *Daily Chronicle*:—"Some years ago there was a much frequented inn in the Lake District called 'The Cock.' The Bishop of Llandaff was a frequent lodger, and in compliment to its right reverend patron the name of the house was changed by the landlord to 'The Bishop of Llandaff.' But soon another inn sprung up, and annexed the old and lucrative title of 'The Cock.' Thereupon the landlord of the original inn, fearing a loss of custom through the mistakes of travellers, devised and set up a sign. At the top was 'The Bishop of Llandaff.' Then came a portrait of the Bishop. And underneath was printed, 'This is the old Cock!'"

A SPECIAL meeting of the Edinburgh Architectural Association was held on the 5th inst., under the presidency of Mr. Henry F. Kerr. The chairman referred in fitting terms to the death of Mr. John M. Brydon, London, and it was resolved that an expression of the Association's regret and sympathy be sent to the relatives of the deceased. Votes of thanks were passed to all who had contributed directly to the success of the recent visits. Professor Baldwin Brown afterwards addressed the meeting on Durham, Hexham, and Chesters, with the view of conveying a general idea of the character and aspect of the principal buildings, &c., to be visited on the occasion of the Association's annual excursion to-day and to-morrow, the 14th and 15th inst. His remarks were illustrated by lantern transparencies.

THE annual meeting of the Art for Schools Association was held on the 6th inst., under the presidency of Professor Waldstein, Slade Professor of Fine Art at Cambridge. The executive committee reported once more a steady increase in their distribution of pictures, the number sold, 4,979, being considerably larger than in any past year. They regretted, however, that there was some falling off in the number of annual subscribers, as it was to this source of income that the committee had to look for any expansion

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in the work. The chairman in moving the adoption of the report and statement of accounts, congratulated the Association on the good work they had been doing. The object of the Association was to supply an educational basis for the good work already being done by loan exhibitions of pictures in poor districts of London and other large towns. Every object with which the child came in contact, he urged, should in the first place be such as to lead to the subconscious development of the artistic sense. Professor Waldstein also pleaded for the study of more sculpture.

THE Brunner Free Library at Northwich has already been damaged by the prevailing subsidence in the town. The question as to how the damage was to be repaired was discussed at a meeting of the library committee on the 6th inst., when the architect reported that builders were averse to tendering because of the peculiar character of the work which was necessary. Under the present Act only 1d. in the pound can be levied for all purposes connected with the library, so that the sinking of the building causes much difficulty. Legislation on the point is now before the Government, but in the meantime the committee resolved to recommend the urban council to levy a rate under the Museums and Gymnasiums Act. An appeal to the public was also suggested.

WAR OFFICE building estimates was the subject of some of the examination of Sir Redvers Buller before the Dawkins Committee on War Office organization. It is very interesting reading. Sir Redvers stated: "If a new building to cost £10,000 is wanted, in order to be able to spend £10,000 on that building you have to get Parliamentary sanction for it. That is done by putting it down in the Estimates, saying that when completed it will cost £10,000, staking a vote that year for, perhaps, £100, sometimes more and sometimes less. But a common sum to take to get a building on the Estimates is £100, and then the Treasury can never refuse to pass any sum up to £10,000 for that building. The building may not be commenced for five or six years. There is no particular reason why it should be begun; perhaps, and very likely, after two or three years, several sums of money having been voted towards it, the building is never begun at all. I have seen it happen." This may be "organisation," but it certainly is not business.

THE General Medical Council have decided, upon the recommendation of its Public Health Committee, to grant the application received from the University of Birmingham for the recognition of its diplomas and degrees in public health. The effect of the decision is that the diplomas and degrees will be accepted for insertion in the Medical Register.

THE Merionethshire County Council, at Dolgelly, on Friday last, listened sympathetically to an appeal by the Principal of North Wales University College for support to a movement for establishing a mining department at the college as an engine of technical education. For such a department a capital of £8,000 is required for a site and buildings, and an annual income af £1,200. The city of Bangor will give the site, the college authorities would erect the buildings, and the North Wales counties are asked to devise a scheme for getting the income from the technical education rates. The council decided to double the rate for technical education, and to send representatives to a conference to discuss the scheme.

THE results of the experiment of trying American locomotives on English railways are not regarded by English engineering experts as being to the disadvantage of the home-made article. "There is absolutely no question, says the *Engineer*, "of the capability of the British engines to do the work demanded of them. There is no reason for doubting that in the long run they are a more economical and better investment than American locomotives. Price and power are therefore beside the question. The element of time alone remains. It is here alone that the advantage rests with the American makers." And even in respect to this question of time the exercise of a little business foresight could surely discount considerably the advantage now resting with America.

THE recent development of the Pentelicon marble quarries in the Piræus is described by the British Consul there in his report on the district for the past year. The quarries are now under a British company, which has spent a very large sum in laying down railways and machinery; and it is hoped that everything will be in working order there by the end of the present month. There is a considerable demand for this marble in the Greek market, and a contract for a large quantity for the Stadion at Athens has been made. It appears, also, to be likely that the marble will find a ready sale abroad. Inquiries are made from all parts of the world, and trial shipments have been despatched to the United States. From one of the quarries a huge block, weighing 75 tons, has been cut for the statue of Moltke in Berlin, but on account of the freight and other expenses connected with its removal it will be reduced approximately to the actual shape of the statue, so that its weight will be 35 tons only. Hitherto Pentelicon marble has been shipped mainly to Germany and in German ships, because the latter have specially strengthened their gear for the purpose of loading and unloading marble. Cippolino marble from the south of Eubœa is being produced in larger quantities also.

FROM the general reports on mines and quarries for 1900, which has just been issued as a Blue Book, we learn that the total output from mines under the Coal Mines Act was 238,291,275 tons, of which 225,170,163 were coal, 2,844,676 fireclay, 7,667,578 ironstone, 2,282,221 oil-shale, and 326,637 sundry minerals. Including 11,137 tons from open quarries the total output of coal was 225,181,300 tons, or 5,086,519 tons more than in the preceding year. The total output from mines under the Metalliferous Mines Act was 3,590,650 tons, of which 1,863,714 were iron ore, and the total quantity of stone and other minerals obtained from mines under the Quarries Act was 41,071,605 tons. Of these 2,933,562 tons were iron ore, and this quantity, together with 1,563,354 tons obtained from shallow open workings, make the total yield of iron ore and ironstone 14,028,208 tons.

OUR ILLUSTRATIONS.

SOME EXAMPLES OF ARTISTIC CRAFTSMANSHIP.

IT is quite a pleasure to step into the dainty little depot for samples of Mr. George Wragge's many interesting pieces of craftsmanship from the very uninteresting bit of modern London in which it lies, viz., No. 211, Shaftesbury Avenue. We give a few hints of the many choice bits of work which are there to be seen, indicating most clearly that Mr. Wragge has taken in hand artistic glass work, metal work, and wood work in a spirit of refinement and originality which will secure the sympathy of the architectural world. Instead of dilating on things I have there seen, it is better to let the sketches suggest something of it, and advise my readers to go and see one of the few really artistic shops in London—not mere affectation and fluster! The refined and telling colours of the glass work add much to the charm of the leaded lines. Though good work is, of course, comparatively dear, one is surprised at the moderate price some of these things work out at.

T. RAFFLES DAVISON.

DESIGN FOR A CITY CLUB.

BY J. A. T. HOUSTON.

Mr. Houston's design is one of decided excellence. In its general character and proportion it shows a sense of the necessary qualities for dignified treatment, and yet is by no means lacking in interest. It is satisfactory to note every such attempt on the part of a student to bring architecture once more into safe and reasonable lines. The plan also is one of more than usual merit.

A PAIR OF SEMI-DETACHED HOUSES.

BY R. HEYWOOD HASLAM, ARCHITECT.

We have here a simple, economical, and effective block. We cannot quite see why the architect did not put the

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fireplaces in the centre dividing wall, and so gather all up together in one large stack, especially as by so doing the convenience of the rooms as well as economy would have apparently been better served.

THE LAW OF AGENCY.

IN preparing this excellent handbook (London: William Clowes & Sons, Limited. Price 8s. 6d.) Mr. R. Gresley Woodyatt, of the Inner Temple and Midland Circuit, barrister-at-law, has adopted the somewhat novel method of stating the law governing the subject in a series of concise rules, supported in the text by extracts from the cases upon which those rules are founded, instead of the more common practice of merely giving references to such cases in footnotes, which makes so many legal text-books uninteresting and even unintelligible to laymen. The advantages are that not only are references provided, but such extracts from the cases as seem necessary to support and illustrate the rules and principles stated are set forth in the text. The various sections of statutes given, and in the appendix the Factors Act, 1889 (52 and 53 Vict., c. 45), and Part IV. of the Sale of Goods Act, 1893 (56 and 57 Vict., c. 71), seem to comprise all the statutory law bearing upon the subject.

The book is eminently useful, both as a work of reference for practitioners and as a guide to students of the law of agency. Seven chapters on Formation of Agency; Authority of Agents; Rights of a Principal against his Agent; Rights of an Agent against his Principal; Rights and Duties of a Principal and an Agent with regard to Third Parties; Determination of Agency; and Public Agents; with a table of over 400 cases, and a useful index (some indices are *not*), complete the work.

As regards their authority agents are classified as universal agents, general agents, and special agents. "A universal agent is one who is appointed to do all acts on behalf of his principal, and whose authority is so extensive that it would be impossible for him to exceed it; but it seems probable that such an agent has never existed in fact." "A barrister is not liable even for gross negligence and want of skill in the exercise of his profession, as his services are purely gratuitous and honorary." Correct legal theory, doubtless, but generally expensive nevertheless.

The book cannot fail to be of real value to auctioneers, bankers, brokers, carriers, estate agents, factors, shipmasters, and shiphusbands, and indeed to agents of every sort and kind.

C. E. G.

OUR LETTER BOX.

THE HOUSING QUESTION: A SUGGESTION.

SIR,—Truly we live in days of madness in regard to the great question of the housing of the population. In the first place the greatest mistake in the world is being made in the matter of the *locality* of dwellings. The exact reverse of the truly scientific and natural order of things is being perpetrated in this respect, in the method that is now the vogue of distributing the populace in the extreme suburbs of our cities, and bringing the workers every day to work all the live-long day in the fetid and noxious atmosphere of our cities, choked up with smoke and poisonous vapours. The supposed benefit that arises from creating great colonies of people in the outlying so-called "rural" suburbs, is absolutely neutralised by the fact that all during the health giving sunlight of day, the workers are buried in the clouds of smoke and vapour of the city, and return for the night to their "rural" habitations, which are for the most part shockingly built tenements in closely packed streets, supposed to be healthily situated because away from the city.

The point I would emphasize is this, that the truly scientific and natural plan of housing the people is, not to send them out into the "country," which is practically not country at all, *but to send the factories into the country*, and to order the towns and cities as centres of human habitation, with all the amenities and benefits of civilization, sanitation and artistic and architectural beauty, with educational and recreative institutions, and everything which civilized society, and a beneficent County Council, can devise to keep men, women, and children, clean and well and happy, in body, mind, and soul. In London the most potentially wholesome, civilizing and humanizing districts, are in the inner and outer circles of the Metropolitan area, where are parks galore, open spaces, places of amusement, exhibitions, art galleries, libraries, etc., etc., all accessible to those who reside within those zones. But the only thing which prevents the mass of people from deriving the full benefit of these things is, that, in the day time, they are poked up in factories, offices, and warehouses, and, in the evening, they are living in stuffy, pokey houses, situated in long dehumanizing, inartistic and insanitary streets, with nothing mentally or morally improving in their surroundings. I contend that this method is an exact perpetration of the folly spoken of in the scriptural statement concerning the philosophy of the tailor's profession. We are putting a patch of new cloth on an old garment.

What should be done, and what posterity will do if we in our time have not the sense to carry it out, is to turn all the factories, offices and business places, in which men toil and labour for their living, out into the country adjacent to the towns, and not too near each other, whereby the smoke and vapours will disperse in the open atmosphere of an unimpeded country firmament, and the workers will breathe a purer air whilst they work. The consequence of this arrangement would be that the murky atmosphere, the smoke-laden air of London, would be freed from the baleful source of its murkiness and vapours, and be purified from its myriad taints. The city would become, as it is normally, a healthy and pleasant centre of human and social habitation. Men would not be dispersed into scattered suburbs, where the provision for their intellectual, artistic, and physical tastes is wanting; they would not be isolated from the many privileges that are centred in the city of London and its districts. They would enjoy to the full the sense of citizenship and of mutual fellowship. Provision would be made for the best that skill, science, and art can produce to adorn and make beautiful the places where men reside and pass their leisure hours—the parks, the buildings and the streets, the open spaces, the places of amusement, of education, of religion and of recreation. The railway systems, which now take out the workers to their suburban tenements—hideous in their utter absence of architectural beauty, of hygienic design, and of healthful surroundings, completely neutralising the supposed benefit of living in the suburbs—will take the workers out to the suburbs to their work and bring them back to the town, now purified from its black pall and made beautiful and pleasant to dwell in. Such a plan is the true way out of the housing difficulty, and, thoroughly carried out, would turn the cities and towns of our country into places of beauty and cleanliness, where men may live together in unity and social happiness.

It is to be granted that this is a reform that involves an immense outlay, and the temporary subversion of industry and business to a great extent. But there are no really insuperable obstacles, and the assistance of those able to contribute large sums to further such an object would make the initial cost fall less heavily on those who would be most affected by such a drastic change.

Yours truly,
S.E.H.

London, June 10th, 1901.

AN ARTS AND CRAFTS EXHIBITION IN SHAFTESBURY AVENUE.

A MOST interesting and charming little exhibition of art metal work and artistic glass work is to be found at No. 211, Shaftesbury Avenue (Oxford Street end), the new London showrooms of Mr. George Wragge (Wardry Works, Chapel Street, Salford). We recently took the opportunity of looking over this delightful little show, and found many things to interest us. We noted first of all some samples of glass from the British Pavilion, which are admirable alike in colour and design. Amongst other glass work we noted a little panel having for its subject an owl, showing a sweet bit of colour and good conventional treatment, and some excellent panel designs

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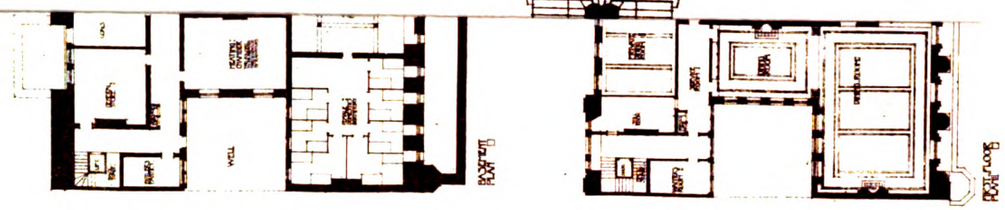
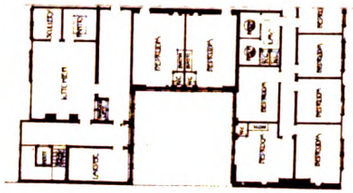
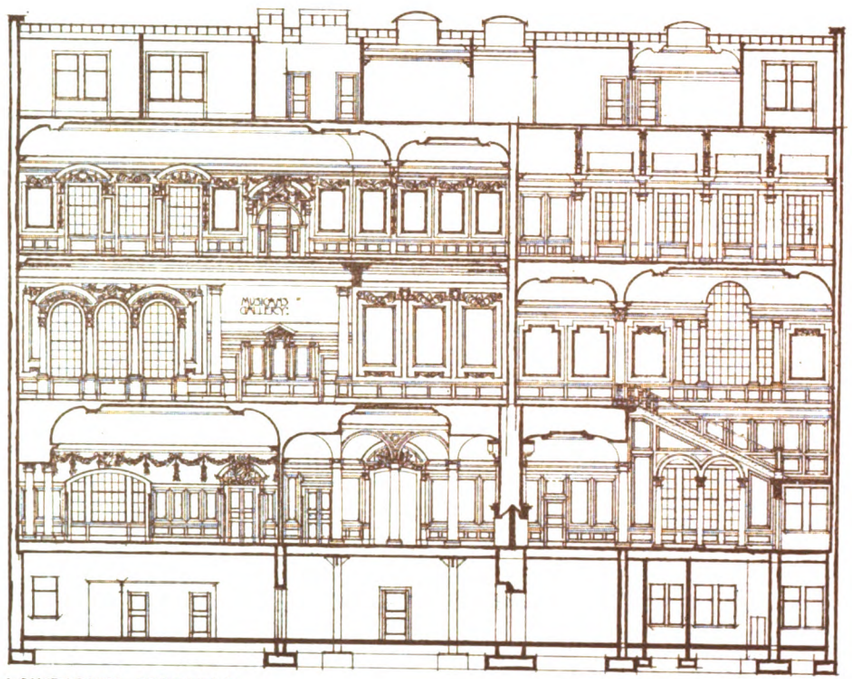
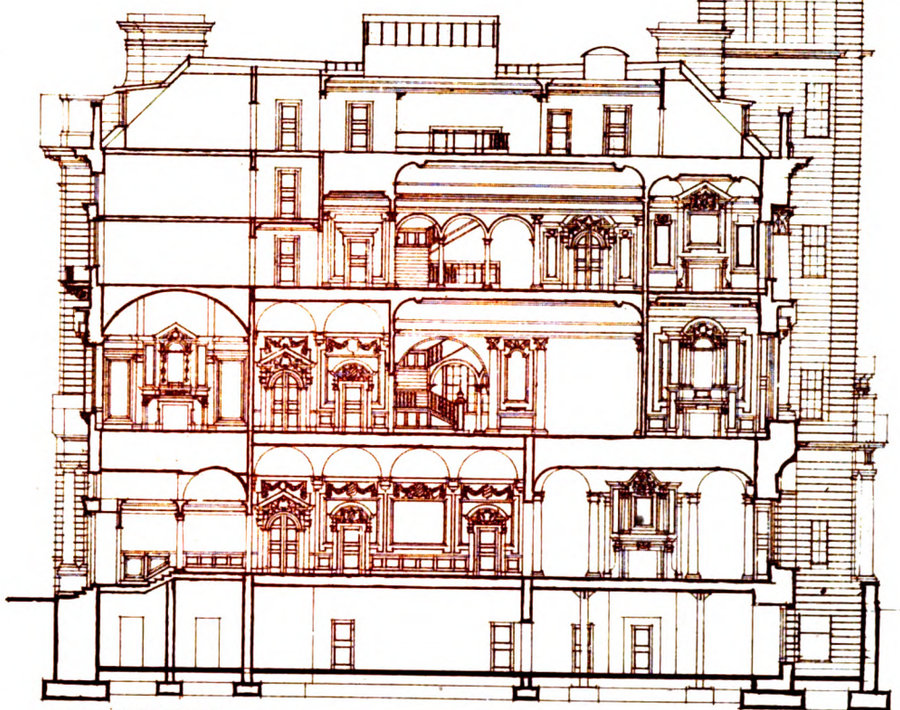
DESIGN FOR A CITY CLUB







LONGITUDINAL SECTION



CROSS SECTION

J. A. T. HOUSTON ARCHITECT, GLASGOW

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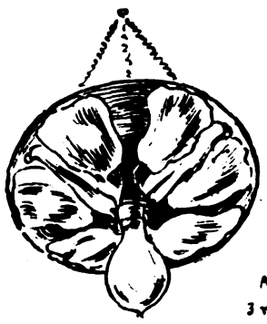
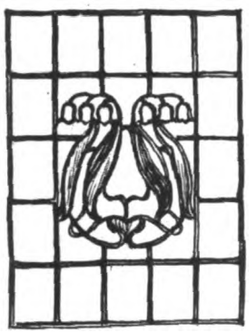
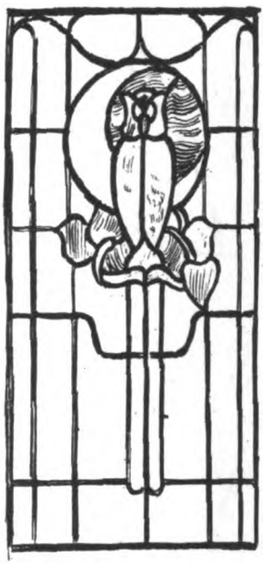


A ceiling light
3 moths round lamps

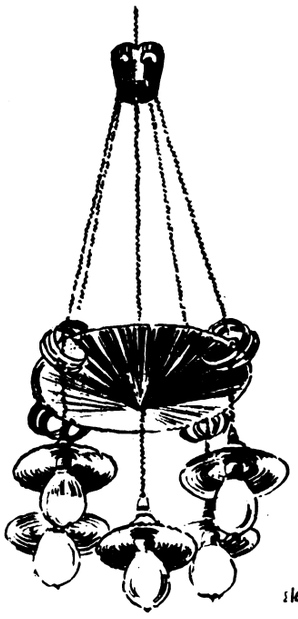


Lily panel

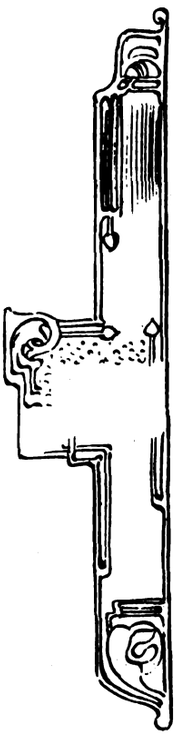


Owl panel

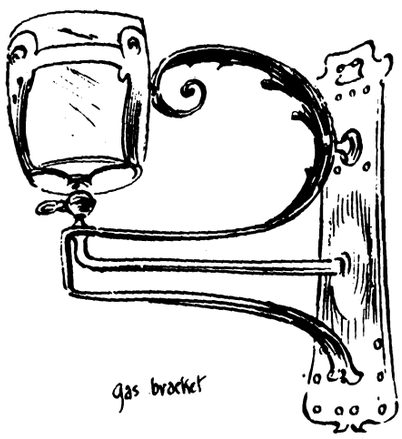
Electric pendant



Electric pendant



door plate
"Listeners hear no good of themselves"



gas bracket

ARTISTIC CRAFTSMANSHIP
BY GEORGE WRAGGE.

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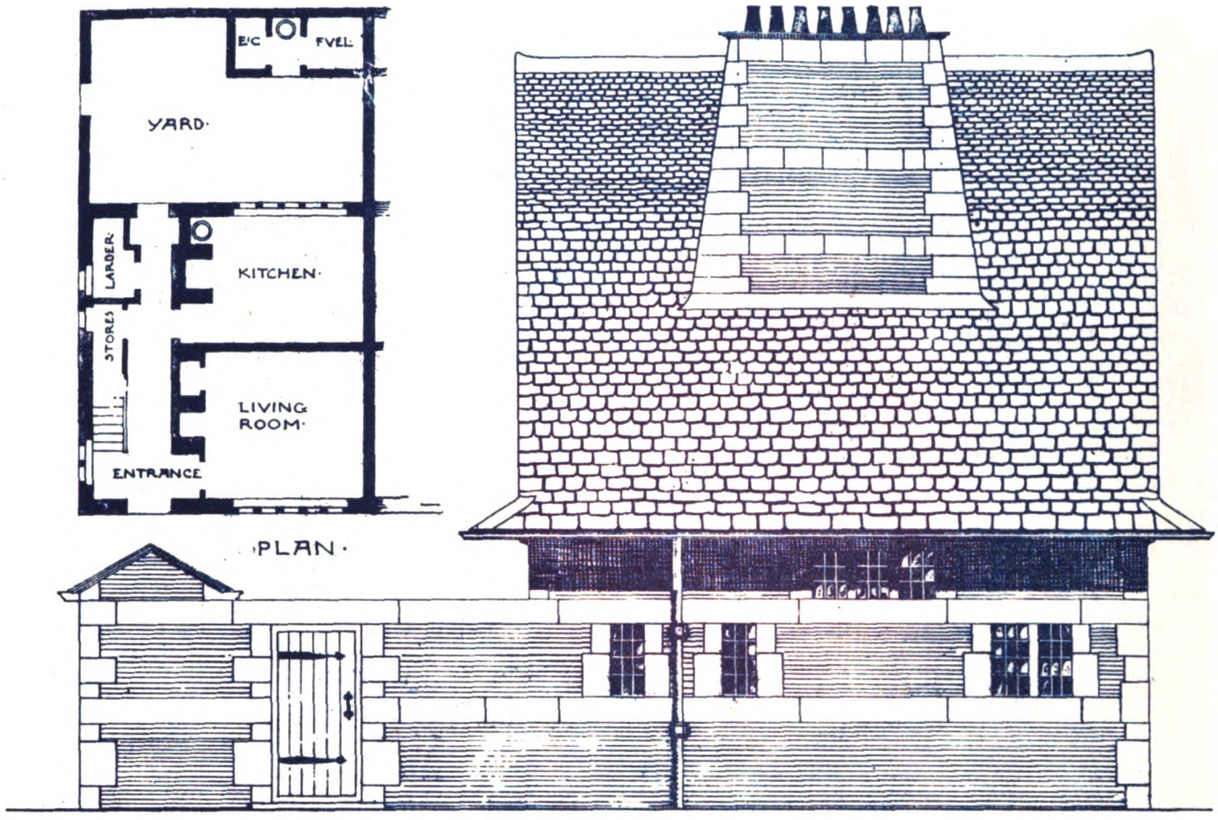
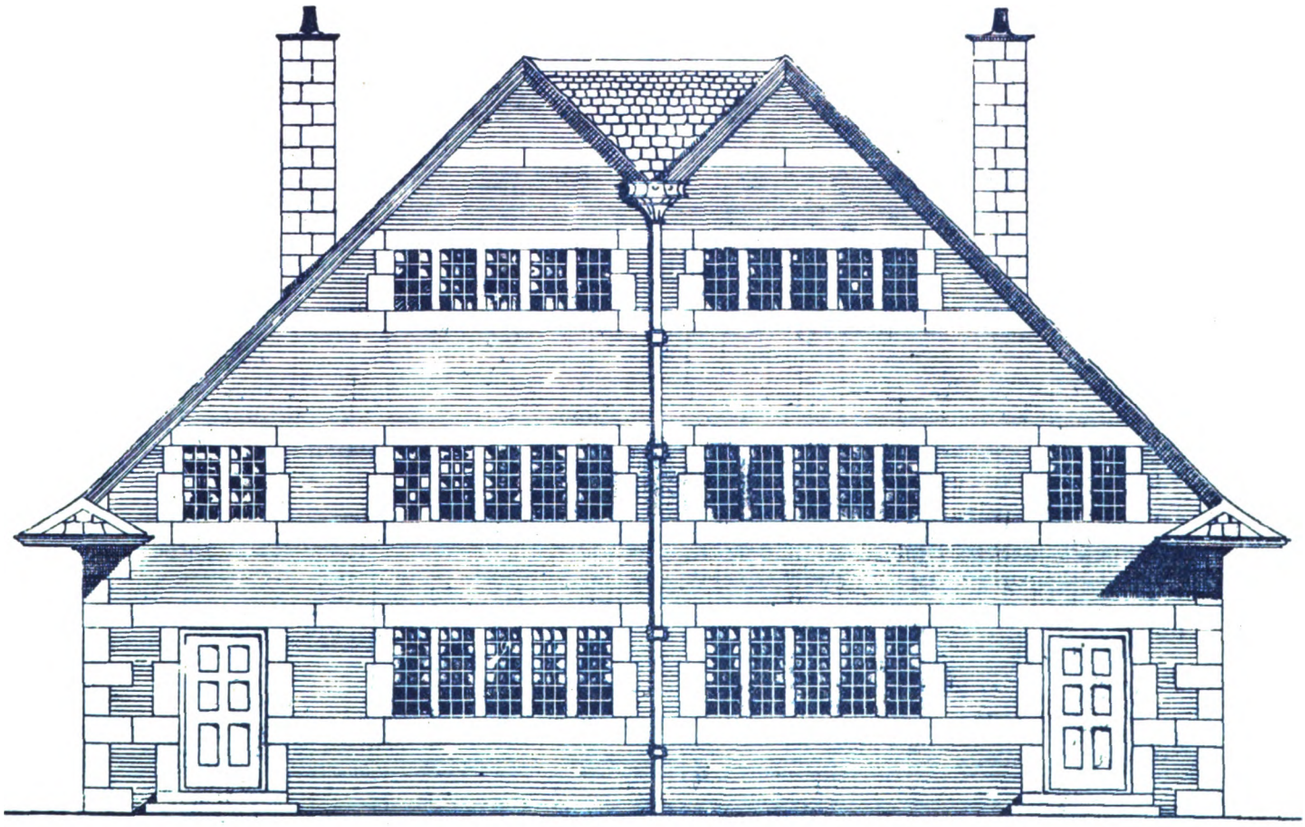
TWO ELEVATIONS OF A SMALL PAIR OF SEMI-DETACHED HOUSES.

PLAN.



SIDE ELEVATION.



FRONT ELEVATION.

R. HEYWOOD HASLAM. ARCHT.
CLUN HOUSE. SURREY ST. W.C.

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illustrating such proverbial sayings as "A stitch in time saves nine," "The many fail, the one succeeds," etc. In metal work it would be difficult to praise too highly the many examples shown or to single out any particular specimens for special reference. But there are one or two charming hall lamps—one in hammered copper for gas, and one in hammered iron for oil. An excellent table lamp in hammered iron is only 50s. complete. Then we have some delightful work in electric light fittings—one being a pendant of five lamps with metal placque above, and another showing three moths clustered round a lamp in brass. Special gas fittings in copper, left their natural colour without being polished, are also shown. Repousse panels in lead and copper, finger plates, door and window furniture and fittings, casements, etc., make up a really charming exhibition. We should also note the lectern in hammered iron, with the Tree of Life clasping the stem, and repousse panels of the Four Apostles.

Mr. Wragge's business has greatly extended during the past few years, and this must be attributed to the sterling quality of manufacture, and to his enterprise in regard to design. We understand that Mr. Wragge's metal casements have been selected by Mr. Aston Webb for the Royal Naval College, Dartmouth, also by Mr. Waterhouse for Girton College, Cambridge, for the College Hall Victoria University, and St. Mary's Hospital, Manchester. Mr. Wragge also recently supplied a large number of casements and the whole of the ornamental metal work for Messrs. Smellie & Co.'s warehouse, Townsville, Queensland, Australia, according to specification of local architect. One or two important orders now in hand for stained glass and leaded glass comprise the whole of the work in connection with Reigate municipal buildings (Messrs. Mackintosh & Newman, architects); also Owens College Hall, Manchester (Mr. Waterhouse, architect); Pares' Bank, head offices, Leicester (Messrs. Everard & Pick, architects); also casements and glass for Mr. Gerald Balfour's house (Mr. Lutyens, architect); also casements in bronze for extensions to the Rylands Library, Manchester (Mr. Basil Champneys, architect), this latter contract amounting to several thousand pounds.

ABBEYDORE CHURCH, HEREFORD.

THIS fine old church is about to be restored, Mr. Roland W. Paul, F.S.A., being the architect. At a public meeting held in Hereford on the 29th ult., under the presidency of the Bishop of Hereford, a report on the present condition of the church and the proposed repairs was presented by Mr. Paul. It was decided that the work therein detailed as necessary to be done should be carried out. This chiefly comprises urgent repairs to the walls, roofs and floor, and certain additions, such as drainage, heating, lighting, glazing, fittings, etc. The cost is estimated at about £5,600.

Some account of the history of this most interesting ecclesiastical structure has been given by Mr. Paul, and which is worth quoting. He says:—

"The Abbey of Dore owes its existence to Robert, Lord of Ewias Harold, who founded it for Cistercian monks in 1147. Its situation in the beautiful Golden Valley—secluded like other Cistercian houses, well within the chain of border castles that stretched from Grosmont and Longtown to Clifford and the Wye, and within a couple of miles of the castle of its founder—doubtless saved it from the inroads of turbulent bands, which made its neighbour Llanthony, in the Black Mountains, well nigh untenable. From its foundation until the latter years of the thirteenth century there seems to have been but little to check its growth. Grants of land and other gifts were made to it by its founder, the Lords of Clifford, the Alans of Alansmore, and others, and many, doubtless, besides Robert of Ewias and Roger de Clifford were buried within its walls. A consecration rook place at the time of Bishop Cantilape of Hereford (1275-1282), and this probably marks the completion of the church.

"The excavations on the site of the nave that have been carried on since 1893 by the author of these notes, have strengthened the theory that no structural alteration, beyond, perhaps, revaulting, took place in the building between that date and the Dissolution. The church of Dore followed the usual Cistercian plan. It had a long nave with narrow aisles, aisleless transepts with two eastern chapels, and an aisleless Presbytery projecting beyond them. The cloister court was on the south side, and the buildings surrounding it included, on the east, a vestry, chapter-house, and cellarage, with dormitory over; on the north, the Frater, warming-house, kitchen, etc.; and on the west, the range of cellarers buildings, and rooms for the Conversi or Lay Brethren, which was divided from the cloister by a 'lane' or court, as at Byland, in Yorkshire. A short time only could have elapsed between the completion of the church as originally planned, and at the time when it was no doubt found necessary to enlarge the Presbytery. This was done by removing the eastern walls of the two inner transept chapels, piercing the Presbytery with arcades, and carrying an aisle or ambulatory round it. On the east a range of five chapels was erected, and there were two other chapels in the south aisles. This eastern extension is one of the most beautiful features of the interior, and was highly decorated with colour, much of which still remains, partially hidden by whitewash. During the thirteenth century it is evident from discoveries made that the south aisle of the nave was partially or wholly rebuilt, and both aisles and nave were revaulted. There are a series of four bosses of considerable size and beauty of detail—two built into tombs at the east end, a third at the west end, and a fourth now at Ewias Harold church, of still later date, possibly the beginning of the fourteenth century, which lead one to suppose that a portion perhaps the choir—was revaulted at this time.

"Digging has determined the length of the nave and its arrangement. It was 137 ft. long, of nine bays, with narrow aisles. At the second pair of columns west of the 'crossing' was the pulpitum or great screen wall, against which the monks' stalls were returned and which formed the termination westward of the monastic ritual choir. Against its west side were two altars, both of which were discovered in a mutilated condition. Further westward, in the fifth bay of the nave, was a second screen, having a central altar against its west side, flanked by doorways. This formed the altar of the Conversi or Lay Brethren, and their choir stalls stood on either side between this altar and the west end of the nave. They had access to this part of the church from their buildings on the west side of the cloister across the 'lane,' and through the doorway in the north aisle. It is uncertain whether or not there was a west doorway. The return wall was discovered at the north-west angle, but the rest of it appears to have been destroyed. The stone screens which were placed between the columns in Cistercian churches, dividing the nave from its ailes, were discovered remaining two or three feet in height, in two bays on the north side. The arcades had pointed arches, carried on large circular columns with square bases. The whole was late Transitional Norman. There was no triforium, but over the arcade and divided from it by a string course was a clerestory, with a single lancet in each bay. From discoveries made it was clear that the whole of the portion of the nave near the nave altar and the pulpitum was richly decorated, and the space between the two screen walls was probably largely taken up by monuments and tombs.

"Of the many tombs that the church must have contained only three effigies now remain. Two of knights in chain armour lie on made-up tombs in the eastern chapels, and are said to be Robert of Ewias, the founder, and Roger de Clifford. The third is a diminutive effigy of a bishop, now lying loose and neglected in a recess in the ambulatory, which formerly covered the heart of John de Breton, Bishop of Hereford (1269-1275). It has an effigy in low relief and a marginal inscription in Lombardic characters.

"Of the monastic buildings which stood on the north side of the church the most remarkable was the Chapter House. It was a twelve-sided building with a central shaft, and was an enlargement eastward, in the thirteenth century, of the earlier Chapter House, which became in the transformation its vestibule. Doubtless this enlargement was a part of the scheme which included the enlargement of the Presbytery, and it is noteworthy that the Cistercian Monastery at Margam, near Swansea, founded in the same year as Dore by Robert, Duke of Gloucester, has a chapter house of similar form, but of earlier date. The Presbytery of Margam was, like Dore, enlarged, and it is quite possible that, close as the communication was

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between the Cistercian houses, Dore copied its chapter house from Margam, and Margam in its turn was induced to rival Dore in the glories of its Presbytery.

In 1534 the Monastery was dissolved, and the Dissolution left Dore much as other monastries were left. Altars and images were broken down, the roof was removed, the paving was torn up, and the glass destroyed, and in course of years the elements completed what the desecrator had begun. It passed into the hands of the Scudamore family, and no doubt it became a quarry for the neighbourhood. It remained in its ruined state for nearly a century, when John, Viscount Scudamore, decided amongst his other munificent acts, to restore a portion of the church for divine service. It was re-opened on Palm Sunday, March 22nd, 1634, with much ceremony. The restoration of Lord Scudamore's forms a very interesting period in the history of the fabric. He found the great church a ruin. The church was large; the village, possibly large during the flourishing days of the Abbey, had become reduced in size after its dissolution. He decided, therefore, to restore a part only of the church, and the eastern arm naturally was that which lent itself the most to the requirements. Its vaulting was gone, and the transepts and Presbytery were re-roofed with a flat plaster ceiling divided by means carried on brackets springing from the old vaulting shafts. The altar, found used as a salting stone, was replaced. The fittings included an elaborate Renaissance screen the east arch of the "crossing," pews, pulpit, and prayer desk under the "crossing" west of the screen, a western singing gallery, a south porch, and the railing in of the Sacrarium. The eastern triplet over the altar was glazed with coloured glass, excellent for its date, and at the junction of the transept and choir, a large tower was erected, crowned with a battlemented parapet. The western arch of the "crossing" and the angles from transepts to nave aisles were built up.

We thus have at the present day half of a large mediæval Monastic church, unique in many of its architectural features, highly interesting in its planning, and standing alone as the only Cistercian Presbytery used for divine service at the present day. Scudamore's restoration, if causing some anomalies for the student of to-day, was good of its kind, and considering the difference in style, the scale of the great church has been admirably kept in the fittings, which were introduced. He not only preserved for us a most valuable architectural monument, but considerably added to its interest by his treatment of the interior.

THE ROYAL EXCHANGE PANEL PAINTINGS.

THE chronological scheme adopted by the Gresham Committee for filling in the panels of the Royal Exchange with works of art is as follows:—1. The Ancient Britons and Phœnicians trading on the coast of Cornwall (given and painted by the late Lord Leighton). 2. Alfred the Great repairing the walls of the City in the ninth century. 3. William the Conqueror granting a charter to the citizens of London (given by the Corporation and painted by Mr. Seymour Lucas, R.A.). 4. William II. building the Tower of London. 5. Henry II.: Foundation of the Hospital of St. Thomas of Acon. 6. King John sealing Magna Charta (given by the late Mr. John Paddon, and painted by Mr. E. Normand). 7. Scene of a Folkmote in St. Paul's Churchyard. 8. Edward II.: The famous *iter* at the Tower. 9. Edward III.: The entertainment of the Vintners' Company to the five Kings. 10. Richard II.: The insurrection of Wat Tyler. 11. Henry IV.: Sir Richard Whittington's charities (given by Mr. Abe Bailey, and painted by Mrs. E. Normand—Henrietta Rae). 12. Henry VI.: The Charter of Philip the Good, Duke of Burgundy, to the Merchant Adventurers, 1446. 13. Henry VI.: Marching of the trained bands to Barnet. 14. Subject not yet settled. 15. The award of Lord Mayor Bittlesdon in the dispute as to the precedence of the Merchant Taylors' and Skinners' Companies (promised by these companies and to be painted by Mr. Abbey, R-A.). 16. The Crown offered to Richard III. at Baynard's Castle (given by Mr. Carl Meyer and painted by Mr. S. Goetze). 17. Foundation of St. Paul's School by Dean Colet, *temp.* Henry VII. 18. Elizabeth: The opening of the Royal Exchange (given by the Mercers' Company and painted by Mr. E. Crofts, R.A.). 19. Charles I. demanding the five members at Guildhall (given by Sir Samuel Montagu and painted by Mr. Solomon J. Solomon, A.R.A.). 20. The Fire of London (given by the Sun Fire Insurance Company and painted by Mr. Stanhope Forbes, A.R.A.) 21. William III. and Mary: Founding of the Bank of England. 22. William IV.: Opening new London Bridge. 23. Queen Victoria opening the third Royal Exchange (given by Mr. Deputy Snowden and painted by Mr. Macbeth, A.R.A.). 24. Modern commerce (given by Mr. T. L. Devitt and being painted by Mr. Brangwyn).

FIRE PREVENTION COMMITTEE'S VISIT TO BERLIN.

AS has already been recorded, the British Fire Prevention Committee, at the special invitation of the German Government, arranged to send a deputation to Berlin, firstly, with a view of attending the International Fire Congress; secondly, to see the great Fire Prevention Exhibition which had been organised in that city; and, thirdly, to make itself acquainted with the effect of the new building and factory regulations upon structural work in the capital. As was anticipated, seeing how well the Committee's work is known on the Continent, the deputation met with a very cordial reception, not only on the part of the authorities and the building officials, but particularly from the firemen who consider that the better forms of construction advocated by this body tend to facilitate fire-brigade work and reduce the personal risk of the officers and men.

In accordance with the original programme, the delegates, headed by Mr. Edwin O. Sachs, Chairman, and accompanied by their resident engineer from the testing station, spent the first morning of their visit in conferences with the heads of the various public departments concerned in the protection of Berlin, such as the police president and the governor, the chief of the building police and the chief of the fire-brigade, from all of whom very valuable information was obtained. The afternoon was spent at the Exhibition, a most instructive one from all points of view and covering several acres of ground. The delegates here divided up into sections for the purposes of drafting their report, whilst Mr. Sachs attended the central council meeting of the International Fire Congress due to be opened next day.

The second day was devoted to the proceedings of this Congress, which was opened in the central Council Chamber of the Imperial Houses of Parliament, and comprised a gathering of no less than 2,000 members, half of whom were district surveyors, engineers, architects and insurance experts from all parts of the world, whilst the other half included chief officers of the leading professional and volunteer brigades. The Congress was presided over by the German Minister of Finance, with four vice chairmen: namely, the Minister of Interior, the Chairman of the Central Council (Count Kamerovsky), chief officer Westphalen of Hamburg, and Mr. Edwin O. Sachs, whilst among the official guests on the special visitors' tribune, were representatives from nearly every public department in Germany. After the official speeches of welcome and exchange of courtesies on behalf of the different countries represented (Mr. Sachs speaking for Great Britain and the Colonies), four papers were read, the first dealing with the relations between fire-brigade and building police by Mr. Kremer of South Germany, the second by Mr. Sachs, on the work of the Fire Prevention Committee, the third by Mr. Cazier of France, on motor cars for fire-brigade use, and the fourth by Mr. Welsch, of Belgium, on the use of smoke-helmets and their history.

Among the resolutions adopted as an outcome of these lectures, were the two following:—(1) "That the careful investigation of fire-resistance of building materials and systems of construction was a subject that should have the support, both of the Government and local authorities, as well as of the technical societies, to the members of which the results of such investigations are of importance in the

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practice of their profession." (2) "Owing to the fact that identical materials and systems of construction are frequently employed in different countries, an effort should be made to standardise the results obtained from fire tests in such a manner that the investigations made in different countries could be compared in a practical manner with due regard to units of measurement and temperature."

The resolutions were supported by Mr. Gamble, of the Metropolitan Fire Brigade, and Major Fox, of the Salvage Corps, who were also attending the Congress, as well as the German and French officers, and were carried unanimously. It should here perhaps be added that Mr. Gamble and Major Fox had the facilities of the committee's special programme accorded them, and joined the special deputation on several occasions, where the matters dealt with were of particular interest to their departments.

The afternoon of the second day was devoted to further inspection of the Exhibition (Mr. Farrow and Mr. Marsland being particularly entrusted with this section of the work) and the survey of some large electrical works which were of interest from a fire point of view, whilst in the evening the delegates joined the members of the congress at a big banquet given at the exhibition, at which the Minister of Finance again presided, supported by the vice-chairman named above.

The next day was again devoted to a considerable amount of Congress work in the Houses of Parliament, no less than seven lectures being dealt with, those of particular interest to this country relating to—firstly, insurance contributions; secondly, warehouse fires; and, thirdly, cotton fires. In connection with the first-named, a resolution was unfortunately passed by a large majority and against the protests of Mr. Sachs, Chief Westphalen (Hamburg), Chief Dittmann (Bremen), and others, advising legislation to enfore certain contributions on the part of the insurance companies towards the maintenance of fire brigades. Such a demand is, of course, economically wrong, as it would simply bring with it a rise of insurance premiums.

In the afternoon of this day the Berlin fire brigade headquarter was visited, where a special demonstration was given, whilst in the evening the British Fire Prevention Committee gave a banquet, presided over by Mr. E. O. Sachs. The banquet was particularly notable for the representative nature of the gathering, the guests including, besides his Majesty's Ambassador, the Commissioners of Works for Prussia, the Presidents of nearly every international fire organisation of the Continent and the chiefs of the principal capital cities of the Continent, England being represented by the following guests (many men in high government positions):—Mr. S. Gamble, Major Fox, and Mr. Folker (secretary of the National Fire Brigades' Union). The three vice-chairs at this banquet were taken by Mr. Frederic R. Farrow, Mr. Ellis Marsland, and Mr. Charles E. Goad.

The next day was entirely devoted to the inspection of buildings at Berlin, the Police President having put some fire engines at the disposal of the Committee's deputation and arranged for their being accompanied by the officers of his various departments concerned and some district surveyors. A factory, a tenement house, a large store, a bank building, a theatre, and other similar structures were carefully inspected, and the round completed by a visit to the Royal Technical College and the Government testing station. At midday Mr. Sachs, Mr. Gamble, and Major Fox had the honour of being entertained at luncheon by his Majesty's Ambassador, Sir Frank Lascelles, whilst in the evening the deputation attended a large reception given by the magistrates of Berlin at the Town Hall, Mr. Sachs afterwards joining the Ministerial supper party given by the Mayor of the City.

With this reception the official part of the deputation's visit terminated. After staying another day at Berlin, the party moved on to Hamburg, where arrangements were made for another official reception.

MADAME SARAH BERNHARDT'S opinion of the Imperial Theatre is that it is the finest playhouse in the world. That is what she told Mrs. Langtry when she went over the new building and afterwards took tea in the green room.

SANITATION IN PARIS.

DOMESTIC sanitation is making but slow progress in Paris, according to the Paris correspondent of the *Lancet*. The sanitary authorities hoped, and thought, that the drainage of the great majority of Paris houses would be terminated by the time that the Universal Exhibition opened its doors in 1900. They did not count, however, on the tenacity, ingenuity, and avarice of the owners of house property. The reforms projected, it is true, were not of a nature to injure the interest of householders. They represented, on the contrary, what was and has been proved to be in the best interests of property owners; but they entailed a preliminary outlay, and the certainty of an immediate loss, however great might be the prospective gain, has proved a serious obstacle.

Originally the sewers of Paris were not intended to receive domestic drainage. They had their outfalls into the Seine, and the river is too small and too far inland to receive the drainage of the houses. Slop-water was allowed to flow into the sewers, but the closets all drained into cesspools, or into portable tubs or pails. In the course of time, however, and after endeavours extending over many years, the town has acquired sufficient land at Gennevilliers, Achères, Triel, and Méry, to receive the whole sewage of Paris, some 180,000,000 cubic metres per annum, and throw it on to the soil. Being thus utilised for agriculture and purified, there was no longer any objection to draining the closets into the sewers, for the crude sewage was henceforth not allowed to flow into the river. The completion of these works was inaugurated on July 8, 1899.

Simultaneously with this great work for the disposal of the sewage more sewers were built in the town and many of the old sewers were repaired or relaid. Then pressure was brought to bear upon householders so that they should substitute for their cesspools or their pails properly flushed water-closets, draining direct into the sewers. By the end of the year 1890 there were only 1,835 houses in Paris which were thus drained, and the mortality that year was equal to 24·1 per 1,000 of the population. In 1893 there were 4,298 houses with water-closets, and the mortality was 21·7 per 1,000. In 1896 there were 9,460 houses draining direct into the sewers, and the mortality was equal to 19 per 1,000 inhabitants for the entire town. Of course, there were other causes that contributed to this reduction in the death rate; but, nevertheless, there has been a notable reduction in the death-rate accompanying the improvement in domestic drainage.

At the present moment there are in all 78,000 houses in Paris, and of this number nearly 24,000 houses now possess water-closets and drain direct into the sewers. For the remaining 54,000 houses there are still in existence 47,913 cesspools, 21,813 tinettes filtrantes (metallic pails, which, while retaining the solid matter, allow the liquids to flow to the sewer), and 11,900 wooden tubs or pails which retain both solids and liquids. The cesspools are supposed to be emptied once in the year, and the pails removed once a week or oftener. When the cesspool or the pail systems are employed there is no water in the closets and no syphon traps can be applied. A pan can only be cleaned with a brush and by pouring a little water on it from a hand-jug. If much water is used the proprietors soon find this out and complain to their tenants, for they object to the cost of frequently emptying the cesspool. Under these conditions the soil-pipe is always foul, and there is nothing to prevent the air from the soil-pipe and the cesspool below entering the dwelling-rooms of the house. With the tinette the position is better; a larger quantity of water may be used since it can escape from the tinette into the sewer.

SANITARY IMPROVEMENTS AT ZERMATT.

VISITORS to this most popular health resort in Switzerland will have their minds reassured as to the sanitary condition of the place by the letter which the Dean of Norwich has addressed to the *Times*, The Dean writes:—"Twenty years ago there were but two large hotels in Zermatt. There are [now over twenty. The drainage of what may be called, in the height of the season, the town has become a serious problem to all concerned.

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From time to time suspicion has been aroused as to the insanitary condition of the village. The hotel proprietors, under the lead of Herr Alexandre Seiler, have made up their minds to cope with what was becoming an increasing difficulty. They have formed themselves into a syndicate to provide the capital necessary for the introduction of drains on the most approved method. The winter was given to extensive preparation, and with the arrival of spring Zermatt was opened up and huge drains were laid, while connexions were formed with other smaller drains from each of the side streets. The system runs down to the Viége-Zermatt Station; it passes thence alongside the Zermatt-Gornergrat line, and into the river Visp at one of its most rapid points. Water from the Trift-thal is kept perpetually running through the system, and from such a height the flush will be quite effective. Notwithstanding the severity of the winter, the lateness of the spring, and the magnitude of the work, it will be completed in the early summer. Two other improvements have been made. A huge reservoir has been constructed up the Trift, which supplies the hotels, fountains, fire and irrigation pipes, and the vexatious cobstone in the central highway has given place to a smooth pavement."

CONCRETE SUBWAYS FOR UNDERGROUND PIPES.

A PAPER on this subject was read at a meeting of the Society of Engineers, held on the 3rd inst., by Mr. Arthur Taylor Allen.

In introducing the subject the author referred to the construction of the first subway in England for underground pipes, which took place about the year 1860, in the City of London. This was followed a year or two later by one in the City of Nottingham. He noted the lack of progress there had been in the extension of these new arterial thoroughfares, for beyond one being constructed at St. Helen's in 1898, very little had been done in that direction to minimise the evil resulting from the continuous breaking up of roadways for access to the numerous pipes laid under every thoroughfare. He gave a long list of streets broken up in the course of one year for obtaining access to pipes. He also pointed out the danger and inconvenience likely to arise from roadways being laid over a number of gas pipes, which might soon prove to be of insufficient capacity or become defective, and over water-mains that were laid years ago when the water supply was very limited.

The author referred to the sections of the various Acts in force empowering public companies to break up streets after due notice, causing the total or partial blocking of a thoroughfare, interfering with traffic and operating temporarily to the prejudice of business houses, the owners having no claim for any loss sustained thereby. He then alluded to the increasing number of underground pipes, and the possibility of the provisions of the Rivers Pollution Acts being more rigidly enforced, and in the near future throwing upon some authorities the necessity of separate sewers for surface or storm water. The author then described the subways in London, Nottingham, and St. Helen's. To relieve doubt as to the possibility of a severe frost affecting the water mains in the subways he gave satisfactory thermometrical readings taken in the Albert Street subway, Nottingham.

Turning next to the utility of subways, the author stated that by their construction access could readily be obtained for the purpose of inspection, alteration, or addition to any of the pipes at present hidden and placed beyond inspection. He drew attention to the fact that after works of great magnitude had been undertaken in obtaining a pure water supply, to ensure the health and safety of the population, the pipes conveying the supply were hidden. Thus, a defective joint or a burst might remain undiscovered for a length of time, as was the case some years ago, when the first intimation of a leakage in the borough water mains was reported to him by the sewer men when repairing a sewer in close proximity to the mains.

An efficient system of detection and prevention of water pollution or waste would be provided for by subways, and the life of iron pipes would be considerably increased. Electric and telegraph wires need no longer run along poles and roof fixtures; they could be put underground, thus rendering them less dangerous and more reliable and permanent. Having regard to economy of cost, capability of resistance, and rapidity of execution, the author suggested concrete as the most suitable material for such works, and referred to its practical value as exemplified by its extensive use in connection with works in general.

In dealing with subways for large cities and busy thoroughfares where foot passengers experienced difficulty in crossing the street in safety, the author recommended that, in conjunction with the subway, underground conveniences should form a part of the scheme. Entrances would be erected in the centre of the street, so arranged that an easy and ready access (although private) could be gained from the first landing. This might be regarded as a peculiar suggestion, but he alluded to the revenue it was possible for it to bring in, as much as from £200 to £2,000 per annum having been cleared as profit for such accommodation.

With regard to subways for suburban districts, the author considered all large subways should have lateral ways, about 3 ft. wide by 4 ft. 6 in. high, for the purpose of access and conveyance of gas, water, and other pipes, and he advocated making use of every available space by a specially designed iron bracket for the pipes. The author submitted a proposal for a subway under each footpath of all new streets to receive the water, gas, and other pipes, the subways to form part of the laying out of the new street. He considered it necessary that the gas and water mains should be in duplicate. The concrete wall nearest the house would be perforated with 2 and 2½ in. holes for the house services, thus obviating the construction and expense of lateral ways.

The sewer would be laid under the road with the usual manholes on the principle adopted in the present day, but with the addition of elongated eyes every 20 ft., extending to each subway. The chamber (common to all house drainage) to be constructed in the bottom of the subway by and at the cost of the owner when requiring to connect with the sewer. This method he contended would ensure the surface of the road being kept free from interference.

The author gave the cost of some subways constructed in London as £15 per lineal yard, Nottingham £10 per lineal yard, and St. Helen's £7 2s. 4d. per lineal yard. He pointed out, however, that the information was of but little practical value, and must be accepted with the greatest caution, it being impossible to make a useful comparison between the cost of construction at other places without a knowledge of the conditions of each case. Although the initial cost would prove heavy, he pointed out that there might be some compensation if the excavated materials proved suitable for the concrete work. The author considered that the cost of constructing subways should be borne by a loan for a period of 50 years, as the works come under the category of permanent works.

TRADE NOTES.

MESSRS. COUSLAND & MACKAY, ventilating engineers, 150, Hope Street, Glasgow, and Manchester, are at present carrying out the ventilation of the New Council Chambers at Loughborough.

MESSRS. J. B. JOYCE & Co., church and turret clock manufacturers, Whitchurch, Salop, have received instructions to make a large striking clock with four illuminated dials for the parish church, Dumbarton, Scotland. Also a clock striking the hours and showing time on two dials for Hargrave Church, near Chester.

AN appeal signed by the Archbishop of Canterbury, Lord Roberts, Lord Milner, Sir Harry Rawson, and the Archbishop of Capetown, is being circulated on behalf of the proposal to erect in Capetown a memorial to those who have fallen in the South African war, and as a thankoffering for those whose lives have been spared, and which will take the form of the eastern portion of the new cathedral about to be erected in Capetown. For this purpose a sum of at least £30,000 is required.

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The British Architect.

LONDON: FRIDAY, JUNE 21, 1901.

JUDGING THE ASSESSOR.

IN the Glasgow Infirmary competition the final selection by the Executive Committee gave rise to considerable protest and discussion. It will be remembered that out of the ten designs submitted in the competition the one finally adopted by the committee to be carried out was not one of the four placed 1st, 2nd, 3rd, and 4th in order of merit by Dr. Rowand Anderson, the assessor. But the committee brought in a design passed over by Dr. Anderson, and decided upon its adoption, which decision opens up the important question as to how far it may be reasonable and right for a lay committee to override the experienced judgment of a really qualified professional assessor.

Dr. Anderson's report on the competition, which we published in our issue of the 11th January last, stated the assessor's conclusions as follows:—"After a careful and exhaustive study of each design (there were ten in all) I placed on a short list designs A, F, H and J. In bringing to a focus my opinion of the relative merits of these designs I have kept specially in view—1st, careful planning, with adaptation to site, and to the amount of sunlight the buildings would receive; 2nd, the manner in which the plans lend themselves to the reconstruction of the new infirmary; 3rd, the architectural treatment of the building, and especially of the south front, as a commemorative memory of the Queen's Diamond Jubilee. I conclude to place F first, H second, J third, and A fourth." The committee, however, notwithstanding Dr. Anderson's "careful and exhaustive study of each design," which led him to recommend the four designs above named in order of merit, brought in the design marked E, and finally adopted it, duly appointing its author, Mr. James Miller, of Glasgow, architect for the work. It should be stated, however, that this result was only arrived at by a majority of one vote.

At the time no reasons were assigned for the setting aside of Dr. Rowand Anderson's recommendations. But the Glasgow Institute of Architects having sent in to the chairman and managers of the infirmary a strongly worded letter of protest (see *British Architect*, February 1) and the subject having been considerably discussed by architects and laymen alike, the Executive Committee in issuing an appeal for further subscriptions thought fit to give some explanation of their action in regard to Dr. Anderson and the designs. This explanation which we published in our issue of the 24th ult., was presumably intended to be an answer to the protest of the Glasgow Institute of Architects. In this explanatory statement the Committee pointed out that the function of the assessor as under the terms of his appointment was "to guide and advise, not to select." They also asserted that it was the superiority of the adopted plans which chiefly influenced the Executive Committee, and that interviews with Dr. Anderson had satisfied them that their exclusion from the short leet by the assessor arose from no failure on the part of the selected plan in regard to vital or essential particulars, but chiefly from a difference of opinion in regard to the style of architecture, and the general elevation, "matters on which the Executive Committee ventured to think they were quite entitled to follow their own opinion, and the minority cordially acquiesced in the selection of the majority."

In reply to this statement, Dr. Anderson has just published a spirited rejoinder, which we think deserves all publicity, constituting as it does an excellent precedent for assessors similarly placed. In the course of his letter Dr. Anderson says:—"It is entirely wrong to lead the public to believe that it was solely on account of the architectural treatment of the design they selected that I did not include it in the short leet. I gave the most minute and searching examination to every plan submitted in the competition, and in arriving at a decision I attached supreme importance to those qualities which constituted, according to my view, a scientific building, and one adapted to its purpose and I maintain that the one I placed first embodies a greater number of merits than any of the others."

The Committee in their explanation also remarked, in regard to the architectural character of the adopted design:—"The Committee believe that they have shown discretion in approving the architectural style of the adopted plan. It is distinctively Scottish—the national art of the fifteenth and sixteenth centuries, of which we have examples in Heriot's Hospital, Holyrood, Linlithgow, and Falkland palaces, and in our own old college lately in the High Street. It is, therefore, not only appropriate to the historical associations of the site upon which stood the castellated bishop's palace, but permitting, as it does, a limited use of Gothic forms—as in Heriot's Hospital, Edinburgh—it is more in harmony with the cathedral itself than any classic or modern style."

In reply to this Dr. Anderson says:—"Ranker architectural nonsense than this was never penned, and whoever composed it is absolutely ignorant of the meaning of the terms he uses. I fail to see what associations there can or should be between a building dedicated solely to the relief of suffering humanity and one erected in a semi-barbarous age, and built with appliances for dealing death and suffering outside and cruelties and torture inside. If the relief of the sick and the hurt is to be the one paramount object of this building, that can only be accomplished by utilising to the utmost the beneficent and curative forces of Nature and the teachings of science, and not by erecting and wasting money on the ghastly absurdity of a Baronial infirmary." And Dr. Anderson also says:—"In proof of their competency to judge and decide on all matters connected with the building, the committee state that 'the minority cordially acquiesced in the selection of the majority'—which majority consisted of one. This majority would have been converted into a minority but for most unfair canvassing of the committee before I gave my final explanation. Had I known of this in time I would have thrown up my commission."

Of course, we may take it for granted that the Executive Committee had a good conceit of themselves, and regarded their own capabilities of judging both questions of architectural style and of plan to be quite superior to those of Dr. Rowand Anderson. Then why in the name of wisdom and economy did they call in an assessor at all, unless indeed they wished merely to prove their own infallibility of judgment? To our mind such a decision as this, where an assessor of Dr. Anderson's professional reputation is employed, is little short of an insult not merely to the assessor, but also to the profession at large.

The real question at issue is, of course, as to how far the promoters of a competition may with impunity ignore the recommendation of the assessor. The Executive Committee of the Glasgow Infirmary distinctly asserted their right of ultimate decision in the final selection of a design. But they also went the length of deliberately challenging the professional judgment of the assessor, setting up their own opinion as superior to his. Of course, it is admitted as a broad principle that the promoters should not be absolutely bound by the assessor's decision, but it is laid down in the "R.I.B.A. Suggestions for the Conduct of Architectural Competitions" (clause 1) that the assessor's decision "should govern the selection of the designs." Perhaps this phrase is a trifle elastic in its application, but its meaning is obvious—the assessor's decision is to *govern* (not simply influence) the selection. Can it be said that Dr. Anderson's decision governed the selection by the Executive Committee? We do not think so.

Really we cannot see why, with a properly-qualified assessor, there should be any need for the promoters of a competition to go behind his award. Personally, we should not feel inclined to enter any competition without knowing who the assessor was to be, and without a definite assurance that his decision would be accepted by the promoters. Surely nothing could be more farcical—more completely absurd—than the spectacle of a lay committee challenging by set argument the professional opinion and judgment of an architect of acknowledged long experience and reputation. Better have no assessor at all than come to such a ridiculous ending as that.

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NOTES ON CURRENT EVENTS.

THE site for the new Liverpool Cathedral was definitely fixed upon at a large and representative public meeting held on Monday last, presided over by the Lord Mayor, who was supported by the Bishop of Liverpool and the Earl of Derby and many influential local notabilities. Two sites were before the meeting, viz., the Monument Place site and the St. James's Mount site. The latter was the one recommended by Mr. Bradbury, the diocesan surveyor, in his memorandum on the subject, which we published in our issue of the 31st ult. The Monument Place site was the one which found favour with the Liverpool Architectural Society, whose memorial on the subject we print elsewhere in our present issue. Ultimately the meeting decided by an overwhelming majority to adopt the St. James's Mount site. A large and influential committee was also appointed to carry out the scheme, and we suppose that one of the next questions—and the most important one—will be that of the design. We await this part of the programme with considerable interest.

TWENTY-NINE architects who are members of the Nottingham Architectural Society, have signed an agreement pledging themselves not to submit plans in any competition promoted in the province of the Nottingham Architectural Society, unless the conditions are those published by the Royal Institute of British Architects, or in accordance with the spirit of the same. Other architectural societies might well copy this excellent example.

COMPETITIVE designs for buildings to comprise a market hall, council chambers, offices, committee rooms, etc., are invited by the Llanrwst Urban District Council. The buildings are not to cost more than £2,000, and a premium of £20 is offered for the best design. But intending competitors are required to deposit a guinea for the particulars and plan of site, and they are also warned that "No plan will necessarily be accepted." We need not comment on this.

IT was asked in the House of Commons on Tuesday whether there would be a public exhibition of the designs for the Queen Victoria Memorial before they were finally approved. Mr. Akers-Douglas, in reply, said that should any decision be come to in regard to the memorial of Queen Victoria which would involve an alteration of the Mall, he thought he could undertake to exhibit the proposed design for the information of the House.

IN reply to a question put in the House of Commons on Monday evening in respect to the proposed removal of buildings adjacent to the National Gallery, Mr. Akers-Douglas stated that the Gallery would, as a result of such removal, be completely isolated on the west side. The nearest building would be the south-east angle of a stable, which would be 35 ft. from the north-west corner of the National Gallery. With this exception the space between the buildings would be about 40 ft. The barracks adjoining the National Gallery would be pulled down at the end of the present year.

WE regret to hear of the death of Mr. J. A. Russell Inglis, A.R.I.B.A., of the firm of Williamson & Inglis, architects, Edinburgh and Kirkcaldy, under peculiarly sad circumstances. Mr. Inglis had, it appears, been suffering from insomnia, in consequence of overwork, and had had resort to sleeping draughts, an overdose of which led to his death on Sunday morning, the 9th inst. Mr. Inglis, who was to have been married last week, was only 31 years of age. The earlier years of his professional career were passed in the offices of Mr. J. B. Dunn and Mr. H. J. Blanc, R.S.A., and he was afterwards for a time in the office of Mr. Wilkinson Moore, at Oxford. Whilst pursuing his studies in London and Oxford Mr. Inglis gained the Soane Medallion studentship. He successfully passed the R.I.B.A. examinations. and duly became an Associate of the Institute in 1894. On his return to Edinburgh he entered into a partnership with Mr. William Williamson, architect, Kirkcaldy, and the firm have since had offices in that town and in Edinburgh, having a considerable amount of work now in hand, and being lately successful in the competition for Kirkcaldy Police buildings. Mr. Inglis was highly thought of, remarks the *Scotsman*, by his professional brethren for his ability as an architect and his skill as a draughtsman, and to all who knew him well he endeared himself by his kindliness, generosity, and beauty of character.

THE design for the Memorial to the Queen-Empress Victoria, which is to be erected in Calcutta, has been approved by the Governor-General (Lord Curzon), and will take the form of a great marble hall, in which are to be gathered relics and trophies and objects of art and literature illustrative of the whole history of India, with special reference to the British occupation. Nearly a third of a million has already been subscribed or promised towards the Memorial.

AN influential meeting was held last week at the Liverpool Town Hall to hear from Canon Rawnsley, Vicar of Crosthwaite, Keswick, Hon. Sec. of the National Trust for Places of Historic Interest or Natural Beauty, an appeal for help in the purchase of a part of the foreshore of Derwentwater. Canon Rawnsley explained that public access to Derwentwater is confined to a very few places only. The plot it was proposed to purchase had been declared to be in the market, and what was desired was to rescue it from the speculative builder. It bordered the lake for a mile on the western shore, was 108 acres in extent, and gave access to the hills above. The price required was £7,000, of which £2,000 was promised. After Canon Rawnsley's appeal and an address from Principal Dale, of Liverpool University College, a resolution in support of the desired object was passed, and a subscription list was opened, a liberal response being made by those present.

MR. ARTHUR EVANS, writing from Candia to the *Times* says:—"The concluding excavations of this season in the prehistoric palace of Knossos have produced discoveries which throw an entirely new light on the architecture of Homeric Greece. East of the great central court I have now brought to light a suite of princely chambers with walls descending in places 20 ft. and including the remains of upper storeys. A portico to the east opens on a forehall with 11 doorways and giving access to the principal hall. A side passage leads from this to a second hall, which shows on two sides the remains of a double tier of colonnades, within which a triple staircase leads to the upper galleries. In this hall was a large deposit of tablets with prehistoric inscriptions, one larger than any yet discovered, and apparently containing lists of officials. In the neighbouring chamber were fallen fragments of human figures of coloured plaster in high relief and of most magnificent execution, the rendering of veins and muscles showing a naturalistic skill never again rivalled till the Italian Renaissance. In the adjoining gallery were remains of bull-hunting scenes, in which girls attired like Mycenæan cow-boys also take part."

A CHARMING example of Sir W. Beechey, a portrait of a lady in white muslin dress with gold sash, large straw hat, with scarf tied under the chin, landscape background, was sold at Christie's on Saturday for 1,650 guineas.

IN the sale of the Ashburnham (Barrois) MSS. last week specially notable lots were:—A 14th century manuscript of "La Vie du Vaillant Bertrand du Guesclin," done into French verse by Cuvelier, and extending to 290 leaves small folio, with 14 fine miniatures painted in *camaïeu gris* and heightened in gold, representing incidents in the life of the great French hero; a very fine 15th century MS. of Jehan de Courcy, "Chronique generale dite de la Bourcachardiere," in two large folio volumes of 337 leaves, with six large illuminations, 9 in. by 8 in., and eight smaller ones, representing scenes from sacred and profane history, £1,420; a very fine 14th century MS. of "San Graal et Lancelot du Lac," by Gautier Map, in three volumes consisting of 383 leaves folio, containing 39 splendidly-painted and richly-illuminated miniatures, fresco shape, and 129 very fine large painted and illuminated historiated initials, £1,800; a Book of Hours, of the middle of the 15th century, on 225 leaves quarto, by a French scribe and illuminator, with ten very splendid miniatures in the text, £1,160. The five

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days' sale of 628 lots yielded a gross total of £33,217 6s. 6d.

IN the Cunliffe Brooks sale last week were included a set of six very fine Chippendale chairs, on carved legs and claw feet, which fetched £235, or £40 per chair. Other lots were 24 Chippendale armchairs, with carved backs, 170 guineas; a carved Chippendale armchair, 135 guineas; and a pair of magnificent candelabra for eight lights each, 105 guineas.

AMONGST a valuable collection of engravings of the Early English school disposed of last week at Christie's was a complete and very fine set (13) of the "Cries of London," after F. Wheatley, with wide margins and printed in colours. This set of engravings realised 1,000 guineas, which is 190 guineas in advance of the record price paid for a similar set two or three years ago.

AN interesting exhibition will be opened at the Holland Fine Art Gallery, 14, Grafton Street, Bond Street, W., on the 26th inst. It will consist of the original drawings which have been specially made by the leading artists of Europe and America for the new Illustrated Bible, shortly to be published by the "Illustrated London News and Sketch, Limited," on behalf of the Illustrated Bible Society. Amongst other artists the work of the following will be represented:—Mr. E. A. Abbey, R.A., Sir L. Alma Tadema, R.A., Sir E. Burne-Jones, Mr. Walter Crane, Mr. Frank Dicksee, R.A., Mr. J. M. Swan, A.R.A., Mr. Briton Rivière, R.A., M. J. L. Gérôme, M. Benjamin-Constant, M. J. Israels, M. Jean Paul Laurens, M. Puvis de Chavannes, M. J. J. Tissot, Mr. Fritz von Uhde, Professor Max Liebermann, Signor Franco Paulo Michetti, Signor Giovanni Segantini, and M. G. Rochegrosse.

BY way of protest against the possible violation of the view from Richmond Hill, Mr. George Meredith has addressed the following letter to Mr. F. Chapman, of Sion House, Twickenham, who is endeavouring to foster an active opposition to any such violation:—"Dear Sir,—'Baffle the threat, bright scene. . . .' We need a Wordsworth to protest against such a wrong as the violation of the view from Richmond Hill, which is in truth one among our national treasures. Happily the cry in defence of it has only to be raised in time, for it is a matter touching all of British blood who have some vein of poetic sentiment. Richmond Hill makes a more universal and thrilling appeal than Orrest Head. Yours truly, GEORGE MEREDITH." The quotation with which Mr. Meredith commences his letter is from Wordsworth's sonnet, "On the Projected Kendal and Windermere Railway," and occurs in the following last six lines:—

> "Baffle the threat, bright scene, from Orrest Head
> Given to the pausing traveller's rapturous glance.
> Plead for thy peace, thou beautiful romance
> Of Nature; and, if human hearts be dead,
> Speak, passing winds; ye torrents, with your strong
> And constant voice, protest against the wrong!"

THE inhabitants of Cornwall Mansions, Kensington, finding that the word is now applied to less than ultra-select blocks of residences, have petitioned the Kensington Council to change the name to Cornwall Place, and this has been done. It does not, of course, follow (remarks the *Daily Chronicle*) that the residents will refuse to occupy "mansions in the skies" at a future date, but in the meanwhile they propose to maintain their respectability on earth at all costs.

THE improved street between Charles Street and Kensington Square has been named Thackeray Street in honour of the author of "Vanity Fair," who lived for eight or nine years in Onslow Square, close by. At the house which he had built for himself at No. 2, Palace Green, Kensington, he died on Christmas Eve, 1863.

IN connection with the removal of the "four shoppes" in Cripplegate, and the absorption of the reredos and parochial responsibilities of the doomed church of St. Bartholomew's, Moor Lane, it has been decided to fill a window at St. Giles's with stained glass commemorating the preservation of the church in the disastrous fires of 1897, which set the roof of the church on a blaze, and threatened to destroy the whole building.

HIS MAJESTY THE KING was formally presented, on the 13th inst., with the historic suit of armour worn by the King's Champion of previous times. For many years it was the custom of the Champion on the occasion of the coronation to ride fully equipped into Westminster Hall, and there throw his gauntlet to the floor, and challenge to mortal combat any who denied the right of the King to the Throne. The ceremony was last carried out at the coronation of George I., and it was the suit of armour worn by the Champion Dymoke on that occasion which was presented to the King. The armour is of the Elizabethan period, is dated 1585, and bears the monogram of Elizabeth herself. It was made by the celebrated Sir Christopher Hatton. It is richly decorated and partly gilt, and on it is several times repeated the crowned reverse cipher "E. R." (Queen Elizabeth); it bears the date 1585. There is an extra breastplate for tilting purposes of exactly similar decoration to the breastplate on the suit, and on the left side is an oblong piecing, through which the staples for the lance-rest could pass. There is also an extra reinforcing chin-piece and an extra volant piece for the bevor. In July, 1887, the suit of armour was sold by the Dymoke family at Christie's for under £1,400, and was bought some time afterwards by the late Mr. Spitzer for between £4,000 and £5,000. After passing through various hands it came into the possession of Mr. Davis, of Bond Street, and through him was acquired for presentation to the King. The suit of armour is now mounted, holding a mace, so that it appears exactly as it did at the time of Sir Christopher Hatton, and is placed on an oak stand carved with Elizabethan design, with the letters "E. R." in relief. It is said to be His Majesty's intention to place the armour in Windsor Castle.

THE Council of the Society of Arts last week presented the King with the Albert medal of the society, which had been awarded to His Majesty "in recognition of the aid rendered by His Majesty to arts, manufactures, and commerce during 38 years' presidency of the Society of Arts, by undertaking the direction of important exhibitions in this country and the executive control of British representation at international exhibitions abroad, and also by many other services to the cause of British industry." The King, in accepting the medal, said that, although he had retired from the active duties of the presidentship, he would continue to take a warm interest in the society as its patron.

THE large scheme proposed by the Health Committee of the Birmingham Corporation for the erection of working men's dwellings at an estimated cost of £120,000, on land acquired at Bordesley Green, came before the Corporation at their meeting on Tuesday, when after a long and animated discussion an amendment to the committee's recommendation of the scheme, deferring it till the appointment of a new housing committee next November, was carried by 32 votes to 30.

"I WOULD suggest," writes Mr. Walter Crane, "that all who desire to see the very interesting and picturesque buildings on the west side of Lincoln's-inn-fields preserved should send in their names to the London County Council. I need hardly point out how rapidly the historic and architectural relics of old London are disappearing, chiefly, it appears, under the pressure of commercial considerations and the exigencies of traffic. I presume, however, few disinterested persons would wish to see the historic features of London planed down to the architectural level of a colonial or American city, and that most of London's citizens would wish that, in planning new streets, such relics of the past should be, wherever possible, preserved.

IN our notice of "An Arts' and Crafts' Exhibition in Shaftesbury Avenue" last week, we referred to some work that was being executed by Mr. Wragge at the Rylands' Library, Manchester. We are authoritatively informed that "the only work being done there is the fitting up of two book-rooms with plain fittings that were left when the other fittings were done, Mr. Champneys, the architect for the building, not being responsible for this work."

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NOTES FROM BOSTON, U.S.A.

By R. BROWN.

The Business of Building.

THE building business throughout New England is quite active at present, and many projected enterprises are coming to the front.

New Athenæum Building.

The proprietors of the Boston Athenæum recently voted to sell their present property in Beacon Street and purchase a site elsewhere on which to erect a new building. It was proposed by some to take the present Art Museum building in Copeley Square, but this would entail rebuilding, and the trustees of the Museum, it was stated, did not intend to sell except in entirety, and their price was 1,500,000 dols. Mention has not been yet made as to the architect of the proposed building.

A Building Appeal Case.

The owners of the Westminster Chambers have appealed to the United States Supreme Court for relief from the decision of the State Tribunal, so that it may be a long time yet before 6 ft. is taken off the top of the building. This bids fair to be a celebrated legislative case. It will be remembered the State Supreme Court decided that the height of the building was a violation of the law.

The New Horticultural Hall.

The new Horticultural Hall has just been opened by having within the Hall a fine flower show. The building is the design of Mr. E. C. Wheelwright. Our local newspaper says: "It is worthy of remark that it is the first example of an important public building erected in this city in which the deliberate and successful endeavour has been made to effect a harmony with an equally important neighbouring public building." Both buildings have the same colour of brick and stone. "Instead of entering into a rivalry with Symphony Hall, on the opposite side of the street, the Horticultural Hall supports and reinforces it, and this is effected without loss to itself." Three buildings, it is said, afforded Mr. Wheelwright suggestions for this work,—Palladio's Town Hall in Verona, Hampton Court Palace, England, and the Old Library by Sansoimo in the Square of St. Mark's, Venice. The interior is severely plain, too much so to our thinking, in contrast with the exterior. The great hall is of red face brick and devoid of all ornament. The exterior has much carving in stone. Heavy swags of fruit or flowers in *stone* boldly projecting from a *brick* frieze seem open to criticism.

Art Notes.

The gift of Mr. J. P. Morgan to the Cooper Union, New York, of three collections of textile fabrics, worth between 50,000 and 100,000 dols., is noted by the press. The fabrics form a remarkable group, as they cover the whole history of wearing between the Middle Ages and the seventeenth century.

The art exhibit at the Pan-American exhibition now being held at Buffalo is much behind. There are about 1,500 works in all. There are about 900 pictures, exclusive of the Canadian gallery, which will have about 125 pictures.

Building Items.

The Institute of Technology will erect another building in this city.

Another projected building is a new City Hall for Boston.

A Victoria Memorial Building is being talked about. This will perhaps take the form of a series of halls, in which the various British organizations can meet.

A new hotel costing it is said about a million dollars, is to be built at Newport R.I., and part of it will be finished and ready for use in June, 1902.

Successful Transplanting of Large Trees.

Modern science and inventive genius have made it possible to transplant trees now without the loss of any of their vitality or beauty. A number of large trees have been brought from Westchester County, and from the borderland of Connecticut, and they will be planted in the grounds surrounding Mr. Andrew Carnegie's new mansion in Fifth Avenue, New York.

ENGINEERING AND SANITARY NOTES.

By CHAS. E. GRITTON, A.M.Inst.C.E.

The Retirement of the City Engineer at Newcastle.

A VALUABLE appointment will shortly be vacant for a municipal engineer at Newcastle-on-Tyne, owing to the retirement of Mr. W. G. Laws, owing to ill-health. Mr. Laws is to be retained as consulting engineer at a salary of £500 a year. The vacant appointment is worth £1,000 per annum, and candidates must not be over 40 years of age.

Sewerage, Paving, and Scavenging at Birmingham.

The annual report of the City Surveyor of Birmingham, just issued, gives some interesting statistics relative to the sanitary and other work appertaining to the city surveyor's department. Much of the work in connection with the main sewerage scheme has been carried out departmentally, about 13 miles of pipe sewers and 940 yards having been put in, making a total of about 29 miles of sewers constructed under the scheme up to the end of 1900, and leaving about 24 miles of smaller pipe sewers still to be completed in the higher districts. If no unforeseen delay occurs, the report states, there seems no reason why the scheme should not be completed by the middle of 1902, or three years from the commencement. The report also states that upwards of 3,640 loads of detritus have been removed from the sewers during the year, and carted to tips. The sewers, where possible, have been regularly flushed, upwards of 40 million gallons of water having been used. The road and scavenging department section gives the total length of highways on December 31st as approximately 269 miles, and it is pointed out that a large area of granite sett paving and many of the bricked, paved, and flagged footways are getting beyond repair, and will require relaying at an early date. The area of macadam roads coated was 381,159 superficial yards, as compared with 234,541 superficial yards in 1899. About 160,368 tons of mud and dry sweepings were removed, 43,966,249 gallons of water were used in road sprinkling, and upwards of 4,000 tons of granite chippings and crushed gravel were used for grilling granite and wood pavements.

The Progress of the Staines Reservoirs.

The latter stages of the work in connection with the construction of these reservoirs are being pushed on. At the intake at Bell Weir the sluices and the machinery for working them are practically finished, and the same is true of the conduit along which the water flows by gravitation from the intake to the pumping station at the reservoirs. At the latter the boiler-house and the engine-house are complete, though the boilers are not yet in place and the pumping engines are only in course of erection. Most of the piping between the pumps and the reservoirs is also laid, and the aqueduct from Staines to Hampton has been formed. The two reservoirs, with their total combined storage capacity of 3,300 million gallons, are both finished as regards their embankments, which measure over four miles round. The more northerly of the two is rapidly nearing completion, for little else remains to be done beyond putting in the concrete facing, which is necessary to resist wave-action on the higher portions of the slopes, and of which about three-quarters are already in place. The last quarter will be finished shortly, and it is hoped that this reservoir will be ready for use, if required, in the course of the present year. The other, or southern reservoir is in a less advanced condition, the concrete facings not having yet been begun, but it will probably be finished next year. When this has been completed the three companies concerned—the West Middlesex, the New River, and the Grand Junction—will have an additional supply of 35 million gallons a day. When the flow of the river at Bell Weir exceeds 265 million gallons a day they may abstract any surplus up to 100 millions, of which 35 million gallons may be run direct to the filter beds at Hampton, and the residue pumped into the reservoirs. If the flow at Bell Weir is less than the *minimum* specified, nothing may be taken from the Thames there, but the companies have the water stored in the reservoirs to fall back on.

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A "BIG DIG" AT CREWE.

There is just being completed at Crewe by the London & North-Western Railway, a great undertaking in the nature of a "big dig" which has occupied five years, and has given constant employment during that period to between twelve and fifteen hundred men. The object of this "big dig" is to provide subterranean ways for conveying through the Crewe station the goods trains of the Company, so that the surface lines might be free for the passenger traffic. The new works began in 1896 in the neighbourhood of Basford Wood, where there is a perfect network of sidings and transhipping goods sheds. Leaving the great "gridiron" at Basford Wood, the goods trains descend through immense cuttings to the station, pass under it by means of tunnels, and emerge some distance on the north side. There are three most interesting tunnels. One is just over a quarter of a mile long, and 26 feet 6 inches wide. The other two are 900 feet long and 15 feet wide. The construction of these tunnels was the most difficult and naturally the most expensive part of the work. They had to be driven through stiff clay, and in many places there was only 5 feet between the roof and the surface, over which the traffic was being continuously carried, and with which no interference could be allowed. The tunnels are roofed with steel girders and jack arches, and above them, layer upon layer, are beds of concrete, bitumen sheeting, bricks, and finally asphalt. Altogether 1,000,000 cubic yards of excavation, and 58,000 yards of brickwork were necessitated by the enterprise. Nine bridges have been erected over cuttings and elsewhere, the bridge over the main road leading to the station being the greatest, the retaining wall in some places being 20 feet thick.

A BIG ELECTRICAL ENTERPRISE AT WALLSEND-ON-TYNE.

An important step towards the promotion of the still greater prosperity of the Tyneside shipbuilding and other industries was taken on Tuesday, when, at Wallsend-on-Tyne, Lord Kelvin inaugurated a big electrical enterprise projected by the Newcastle Electric Supply Company and the Walker and Wallsend Gas Company, in the form of a power station supplying the various works on the Tyne with electric energy. Lord Kelvin, accompanied by his host, Sir Andrew Noble, afterwards visited various local engineering and other works on the river at present supplied with electricity. At the subsequent luncheon, presided over by Sir Andrew Noble, Lord Kelvin made a speech on the progress of electricity, and said he thought the time was near at hand when steam-engines would be superseded altogether by electric power, much to the advantage of industry.

A TURBINE PASSENGER STEAMER.

The adaptability of the turbine-driven steamship for passenger traffic was tested on the Clyde yesterday, when the new turbine steamer *King Edward*, which has been built by Messrs. Denny, of Dumbarton, for a syndicate, and in the construction of which the greatest secrecy has been observed, went out for a preliminary run. Only the builders and inventors were on board. A number of runs were made on the measured line at Wemyss Bay, the results of which were highly satisfactory. On the mile the turbine developed between 19 and 20 knots an hour, a speed in excess of what was originally contemplated. The famous Clyde boat *Galatea* was brought alongside, and a spin from Dunoon along the Bulwood shore took place over a distance of four miles. The turbine left the clipper far behind. The trials gave intense satisfaction to all on board. The absence of vibration and the complete steadiness, even when going at full speed, was highly satisfactory. The ship has tubular boiler and five propellers, two on each side and one at the stern. These can be worked separately.

A BIG COMPENSATION CLAIM SETTLED.

SIR FREDERICK BRAMWELL on the 18th inst. submitted his award in the arbitration which recently took place between Sir Tristram Tempest, Tong Hall, Leeds, and the Leicester Corporation for the compulsory purchase of the Beaumont Leys Estate for the purpose of sewage disposal. The amount of the umpire's award is £148,946. It will be remembered that the vendor claimed half a million, whilst the Corporation estimated the value at about £100,000.

OUR ILLUSTRATIONS.

CARNBOOTH, BUSBY, NEAR GLASGOW.

ALEX. CULLEN, ARCHITECT.

THIS excellently designed house has lately been completed. It is situated on an elevated position. The windows of the public rooms are so placed on the plan as to command the extensive views of the surrounding country. The architect was Mr. Alexander Cullen, Brandon Chambers, Hamilton, N.B.

DESIGN FOR A TIMBER BRIDGE.

BY H. A. VEALE.

This pleasing design for a timber footbridge across a stream was submitted in the R.I.B.A. Students' Competition for the Grissell Gold Medal last January.

TWO PANEL DESIGNS FOR GLASS WORK.

These designs we saw at the London show rooms of Mr. George Wragge (211, Shaftesbury Avenue, W.C.), which we lately visited, and of which we gave some account in our last issue.

OUR LETTER BOX.

THE WORK OF INIGO JONES.

SIR,—In the critique of our work, which appeared in your last issue, there seems to be an impression that there are still many buildings remaining designed by Inigo Jones. We are quite aware that much work has been attributed to him, but it has usually been so upon the slenderest grounds, no doubt due to his Crown appointment, which involved employment upon a large number of the big houses of his day in the capacity of surveyor rather than of architect. It thus happens that (1) buildings of a much earlier date have been attributed to him; (2) many houses in which Jones' work would have consisted in merely making alterations for the King's reception whilst on a Royal progress, have in course of time been wholly attributed to him. Unfortunately, much of the work he actually designed is now destroyed.

We have either visited personally or been in communication with the owners of nearly every building attributed to him by our best authorities, and we should be grateful to hear of further buildings not included in our list that could with any certainty be attributed to his hand.

Yours faithfully,

H. INIGO TRIGGS,
HENRY TANNER, JUN.

Stafford House, Chiswick.
June 18th, 1901.

THE STUDY OF BUILDING.

AN exceedingly interesting paper was that which Professor W. R. Lethaby read at the Institute of British Architects on Monday evening last upon "Education in Building."

Beginning with a reference to the ambiguous use of the word "architecture," which "means anything or nothing, according to the verbal needs of the moment," and the indefiniteness of the appellation "architect," which "is almost one of the words which folk-lorists might treat of as a myth-making word," Professor Lethaby pointed out how little either word was found in use in the Middle Ages. This point he emphasised by remarking upon the ignorance that prevailed as to the architects of the wonders of mediæval art in England. The fact was that carpenters, masons, smiths, glaziers, etc., existed in separate or general crafts. Just what the Arti were in Florence, and the Guilds in Bruges, so were the organised crafts in England. The real explanation of mediæval art was to be found in the fact that craft industry, through its organised guilds, claimed and won an honourable place in life; the craftsman prided himself on his city, his guild, his shop, and his tools, as the knight prided himself on his order, his castle,

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and his sword. As to-day, if we wanted to build a shed we should call in a carpenter, or if a garden wall a mason, so in the old days the employer sought the services of a master in the chief craft involved in any given work; carpenters tended to lead in respect to houses, and masons in churches.

The employer had, of course, a considerable say in the matter, and some abbots and barons doubtless very closely laid down the lines of their abbeys and castles: there seems every probability that Richard I. schemed Chateau Gaillard. In works of great importance like a cathedral or a royal work, an agent might be appointed to represent the employer as keeper or co-keeper of the works; such was Wykeham at Windsor. When such a work or a cathedral was going forward a resident master mason or carpenter was employed as architect to do the work. Designing was merely contrivance, the doing of work in an ordinary way, just like cooking. Cases might be found, of course, where some mason recognised as a great master could not be attracted to a new work, but would advise by consultation and by means of rough patterns, while the resident mason would work under his advice, and so on. The vital interest of old builded work was that it was a true evolution, and as natural as a honey-comb or a bird's nest. The thought was close to the act; design was no exercise, no application of a theory—it was just doing work "as it ought to be done according to the craft of masonry."

Professor Lethaby then went on to speak of the building of Westminster Abbey, dealing particularly with the succession of king's masons who had charge of the work in connection with this structure. He also pointed out that as in mediæval times so in the Greek building customs we found the architect to be a directing foreman receiving double the wages of his workmen. In Persia and India, in Constantinople and Italy, the method was practically the same: everywhere the art of building was developed by the continuous experiments of practical masons and carpenters. It was impossible to bring back this state of things—it might be that it was not even a desirable state of things—but it was necessary to recognise that this evolution of masterly building is what we mean by the words Ancient Architecture.

In the study of past art which had been so minutely made by antiquaries it was necessary, remarked the Professor, that emphasis should be laid on the differentia of the several phases as they succeed one another. These characteristics, mannerisms, and limitations were then called styles, but, in a far larger way, there had only been one style of architecture from the foundation of the first hut for the living, and the heaping of the first cairn over the dead. This had been the art of experiment, the art of reasoning on given data, the art of impressing on work the evidence of thought, care, mastery, nobility of purpose, and these things were ever the measure of the worth of any so-called style, and ever will be. They were the measure of the value of our work to-day.

Turning to consider the present and future in the light of the past, Professor Lethaby asked, "What then is there left for us to do?" Should we aim at reviving the forms of some yet untouched style—the styles of Mycenæ and of Mexico, for instance? Or should we urge the return to some position which we might call safe and sure, such as copying the methods and mannerisms of Wren? A moment's consideration would show that we could do none of these things. All that we could do was to turn to a study of the art of building, in the practical work of to-day, in scientific weighing and testing, in observing the stored experience of the past. As to proportion nobody knew anything more about it than that work done with a large reasonableness, and fitted exactly to its purpose, looked well, whilst in regard to taste and principles in design no two were agreed. Nor could any general reasoning be based upon beauty—that subtle and elusive essence which spoke to our spirits through man, nature, and man's work—save so far as a man might try to explain what moved and touched him. In art it was the evidence of a balance of qualities put into man's work parallel to purity, nobility, love, skill, courage, in other phases of his life. Work was certainly a serious part of life: beauty was the index of its quality; beauty was the smile of energy. It was work, the effort we had to teach; not the smile,—that must and would come of itself under healthy conditions. Nothing healthily new, or truly wise and beautiful, could spring in architecture save from the groundwork of knowledge. It was sometimes said that we knew too much; if we were only ignorant there would hope; but instead of ignorance it would be better to have a fulness of knowledge which deliberately went its own way.

Professor Lethaby next propounded the question as to how far should this study of building go. The least way would help—our mere aspect toward an old building, interest in the bedding the stones of it, and in the way the eaves finished at the gables; or, again, a little more stringent criticism of our paper designs from the point of view of reasonableness; the sacrifice of some vain and vapid ornament; all these were so far good.

Then, again, "How could this study of building be done?" In any way and every way. By spending more time at work and less in the office; this especially could be done even now, and profitably, in the middle period, when one was setting up in practice. We might learn much about building by mixing with and questioning the men, who still hand on amongst themselves ancient traditions. We were living through a period of quick change in these things, and probably the most valuable work that could be done would be to gather together old recipes and all the folk-lore of building.

These rough, tired men that sometimes irritate us, said the Professor, the "so-called British workmen," were after all the true artists in building, the representatives of the mediæval architects, and it was absolutely necessary that some relations and community of interests should be established with them once more. It was they and they only who sufficiently know what stones were sound and set on their right bed; what cements worked properly under the trowel; whether every tile in the roof had two nails, and so on. The several organised trades unions, in a much narrowed form, represented the old guilds, and he felt certain that any real improvement in practical building would be accompanied by these unions assuming more and more the functions of the old guilds. By means of schools, and a system of apprenticeship to the guilds, masons would again see to the training of masons, carpenters of carpenters, and plasterers of plasterers. Even at this moment the plasterers of London were trying to make it an obligation that all learners in their trade should pass through such technical classes in plastering as already existed. If this point was gained men would not ultimately be accepted by their fellows as qualified unless they had gone through such an apprenticeship course. Thus we should get back to a definition of "mastership" in the crafts once more.

It had been said that the breeze of art blew where it listed. But where labour was honoured there art would certainly be found, for honourable labour was art, and that proposition must stand. We must draw near to the workmen by every means in our power. Again, we must learn about building in schools—schools of practice and theory, experiment and research. In a big London institution he (the Professor) would like to see all the building crafts carried on side by side, where experiments might be made in brick-arching, stone-cutting, timber-framing, and so on, with due supply of apparatus and testing-plant. Here, also, the mechanics of construction should be taught mechanically and demonstrated in models, as also planning and normal arrangements for given purposes. Even taste, the objecting *negative* taste of a good critic, might be allowed, but not a word on "art," and "design," and the styles, in the usual acceptance of those words. In such a school we might hope to bring together the different craftsmen, builders and architects, all studying together the true art of building and evolving a reasonable architecture.

In conclusion Professor Lethaby urged that the question of education in building to be solved must reach all classes of men engaged in building, and it must set itself to improve all the mass of buildings done in England. It would have been well, he thought, if we could have been ready with a scheme in which all might join a dozen years ago, when technical education was first being practically dealt with. But some day, pleasant, natural, living architecture, would be refounded on common building—it could stand on nothing else.

A vote of thanks to Professor Lethaby for his paper was moved by Mr. Paul Waterhouse and seconded by Professor Beresford Pate, and duly carried unanimously.

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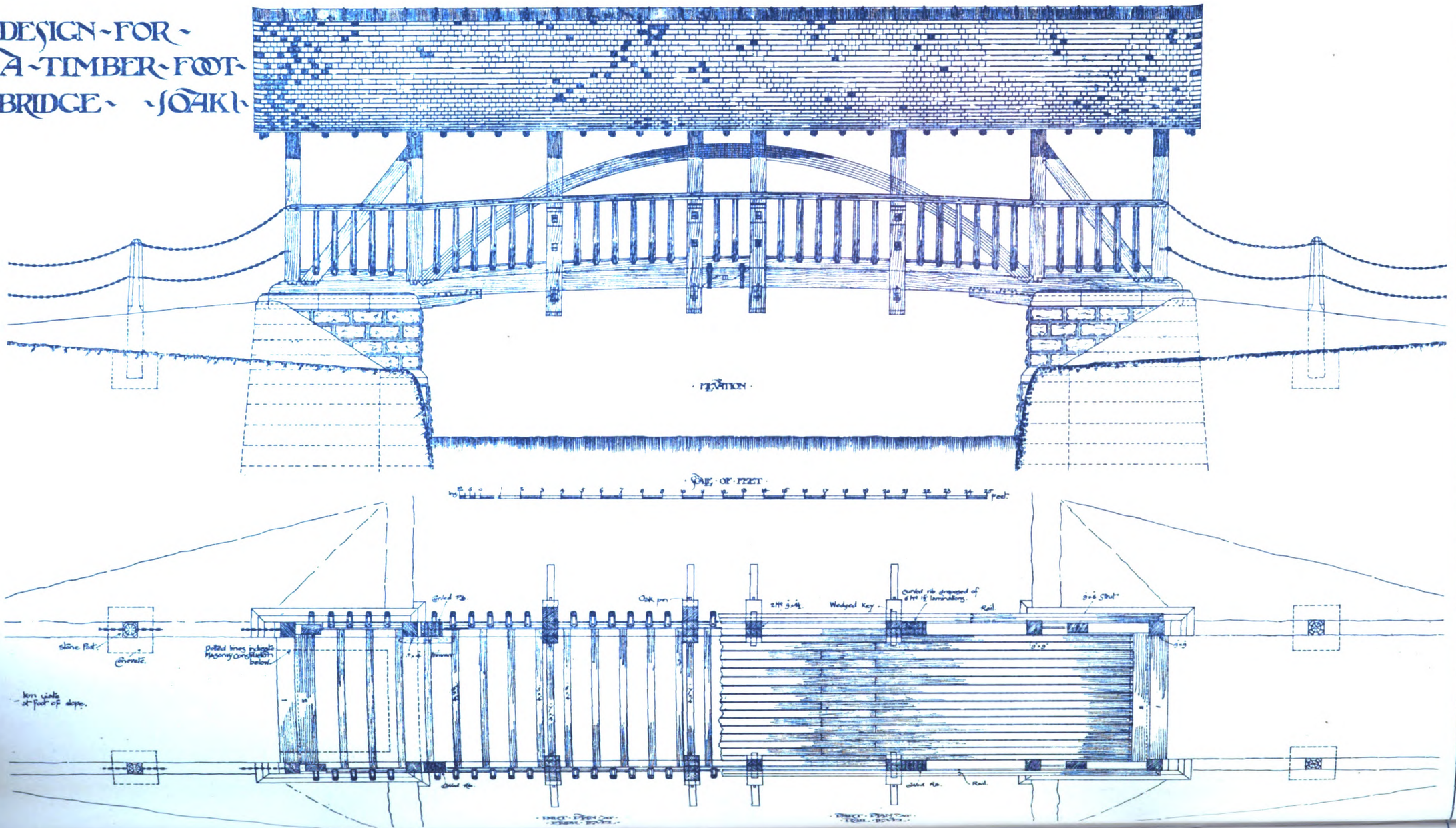
DESIGN FOR A TIMBER FOOT BRIDGE SOAK



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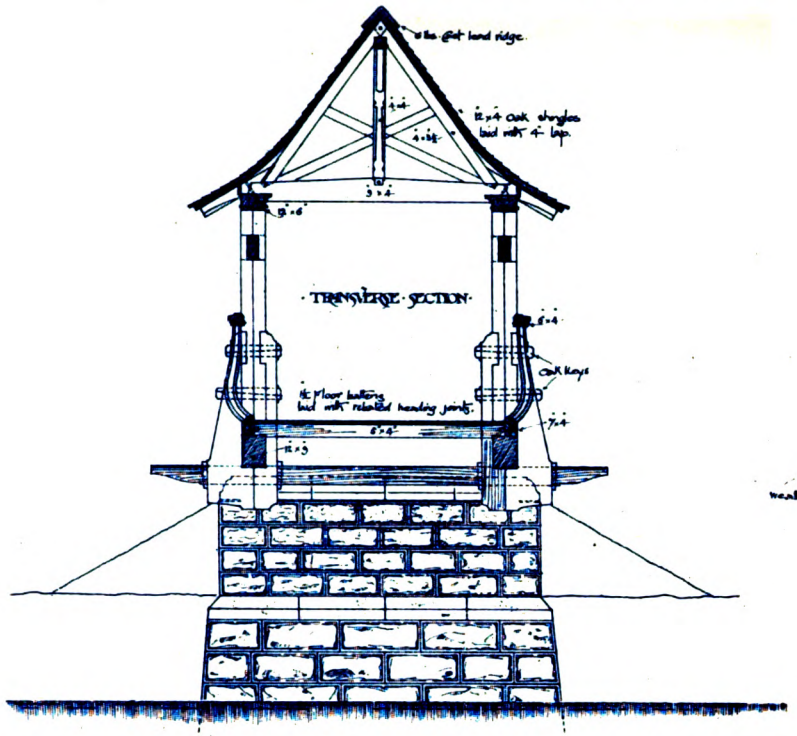

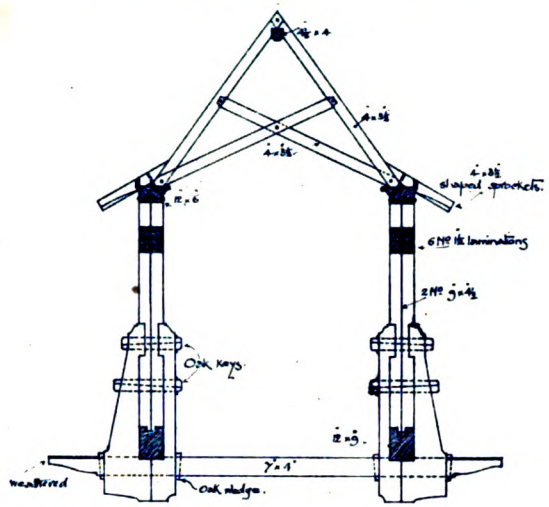

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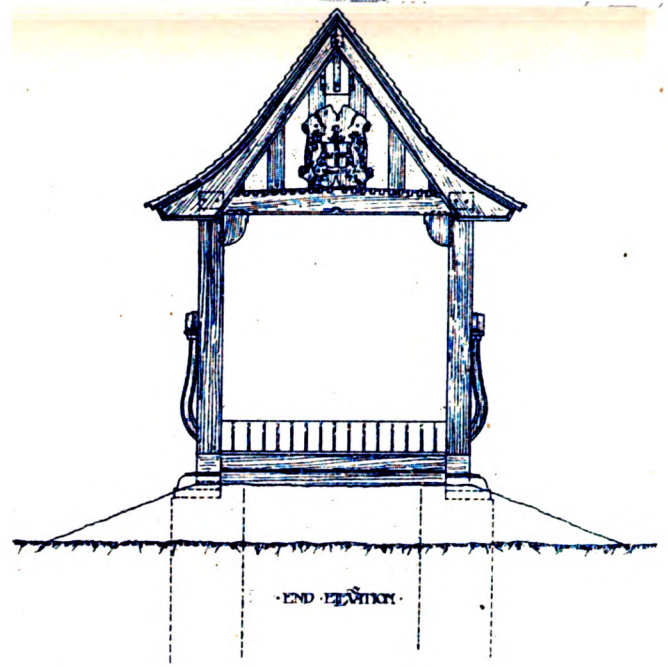

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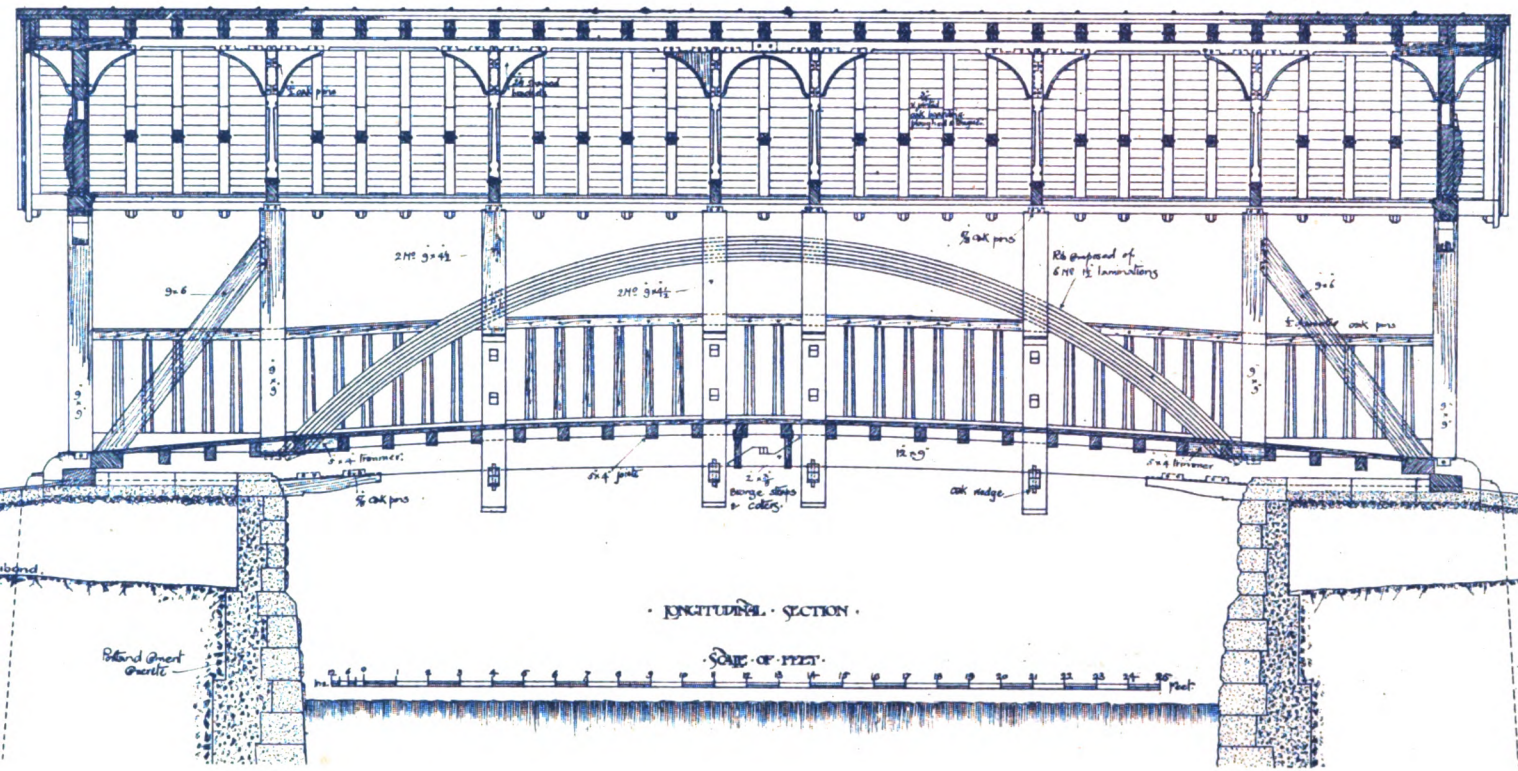

GRISSELL COMPETITION
DESIGN By H A. VEALE.

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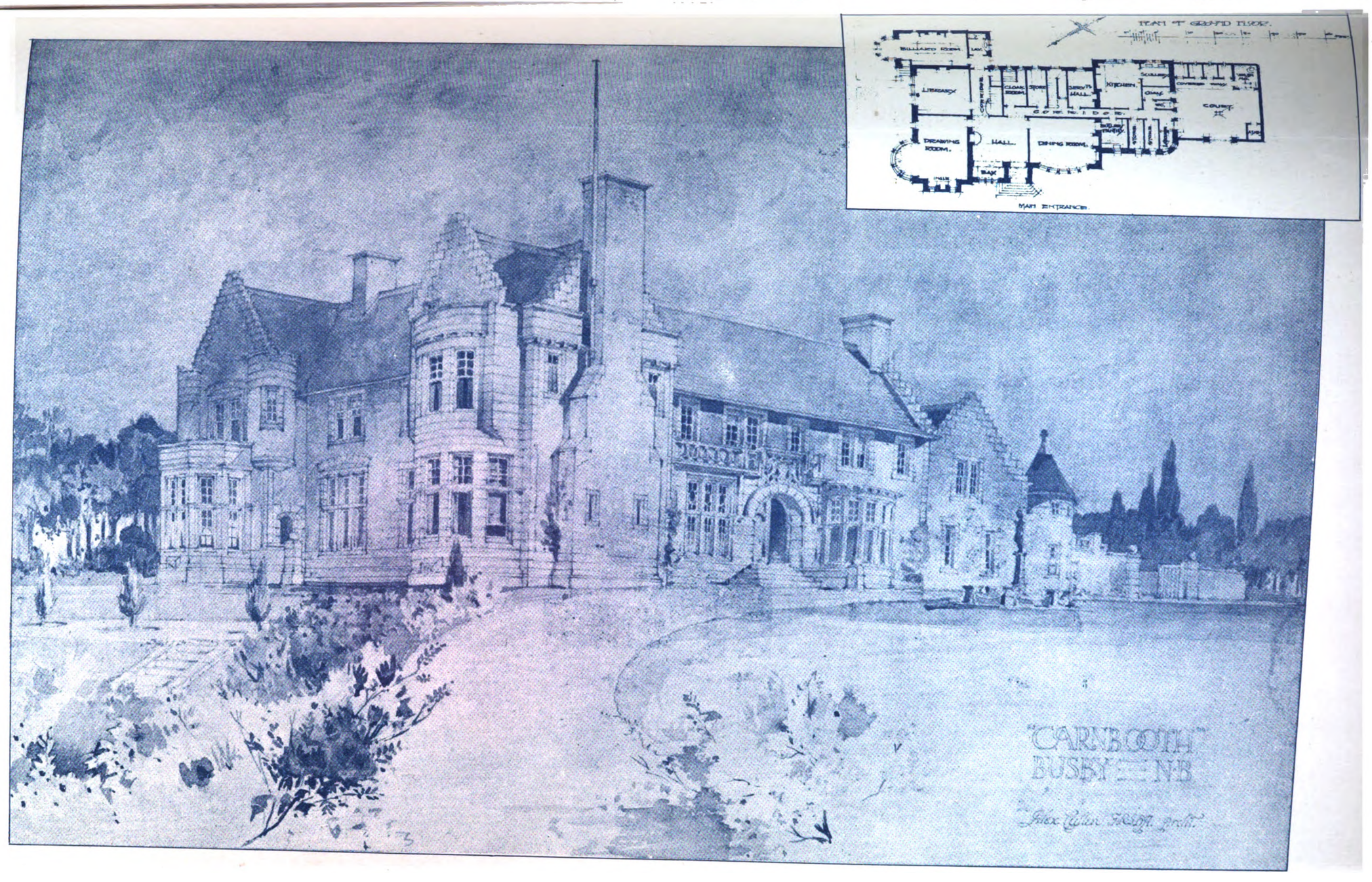

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LOW RELIEF PANELS.
BY GEORGE WRAGGE

A STITCH IN TIME SAVES NINE

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THE SITE OF THE NEW CATHEDRAL FOR LIVERPOOL.

THE Liverpool Architectural Society held a special meeting on the 13th inst., to consider this question. Professor Simpson, the president of the society, occupied the chair. Eventually the following report was adopted:—

"The question of the site for the new cathedral of Liverpool is naturally one of great interest to all architects, and especially to those practising in Liverpool. The first essential of a cathedral for Liverpool is that it shall be a cathedral of the diocese, and not of the city only. The most central position for the diocese is that in closest touch with the railway stations. Four sites have been suggested—(1) St. Peter's Church, (2) Monument Place, (3) St. Luke's Church, and (4) St. James's Mount. These are placed in order of centrality. Of these four sites Nos. 1 and 3 are not considered, as for various strong reasons they are regarded as inferior to the other two.

"The advantages of the Monument Place site are as follow:—Its position and approach are unrivalled in Liverpool. There is an opportunity here for a west front which might be the finest in Europe. The proximity of the site to the great public buildings of Liverpool is of the utmost importance. Its relation to St. George's Hall in view of state processions, civic or otherwise, is of great advantage. It is near to, or in direct communication with, the principal railway stations, and is passed by cars from the Pierhead as well as by those from the north and the south of the city. The site is a very high one, the level of the ground at the west end being the same—132 ft. above the datum line—as that of the St. James's Mount site, and any building, therefore, erected thereon would be as visible from the river and the Cheshire side as one placed in the latter position. The foundation is rock. The removal of many of the buildings at present on the site would be of distinct advantage to the welfare of the city. Finally, the orientation would be that customary in English cathedrals and churches. The disadvantages which have been urged against it are:—The cost of the site; the noise from passing cars and traffic generally; and the surroundings. As regards the first, this is undoubtedly very great. The question of noise is not a serious one, owing to the construction necessary for so large a building. St. Paul's, London, is very similarly placed, and the sound of the traffic outside is hardly, if at all, perceptible inside. The surroundings, it is true, are not all that could be desired; but cathedrals ought to be equally accessible to all classes of the community, and the most favoured quarters are not necessarily the best for these buildings.

"The advantages of the St. James's Mount site are as follow:—The site itself would be much less expensive than that of Monument Place. The situation is a quiet one, and the surroundings are picturesque. Any building erected here would stand out well, and could be seen from the river and Birkenhead. Its disadvantages, in our opinion, are much greater than its advantages. Its inaccessibility is, perhaps, its greatest; it is far removed from the main lines and centres of traffic. The site is a very narrow one, and it would be difficult to obtain a good near view of any large building placed upon it. The approach, in an architectural sense, is very bad indeed, and no vistas would be obtainable from any point. The cost of the foundations would be very heavy; either the present mound would have to be removed, or else the foundations would require to be carried down very deep. The suggested suspension bridge over the cemetery would be exceedingly costly, and possibly unsightly. If the cathedral is placed, as has been suggested, the orientation will be contrary to the immemorial traditions of the English Church. A practical objection to this proposal is that the sunlight striking through the window or windows at the end of the chancel, which would be south, would be a very serious inconvenience to the congregation.

"In conclusion, we consider that questions of economy ought not to be allowed to override every other consideration in placing a building which is to stand for all time. A cathedral need not be built in one lifetime or by one set of donors. We suggest that it would be possible and sufficient for this generation to make the commencement of an entirely worthy work by acquiring a part of what we consider to be the best site (Monument Place), and erecting a portion of the building upon it. This portion might be either the grand west front and nave, taking up the frontage to Monument Place and extending back to Anson Street; or it might be the chancel and transept portion, which would stand on the cheaper land, eastwards, with a temporary west entrance from Anson Street. In matters of vast importance such as this the only thing worth aiming for is the best, and it is our experience that in the long run this is the most easily obtainable."

EDINBURGH ARCHITECTURAL ASSOCIATION.

A LARGE party of the members of this Association left Edinburgh on Friday last for their annual excursion. A departure from the usual one-day excursion was made, and the programme of visits extended over two days, Durham being visited on Friday and Hexham on Saturday. At the former place the members had the privilege of being conducted over the Cathedral and Deanery by the Very Rev. Dean Kitchen. The library was also visited, where Canon Greenwell exhibited his splendid collection of sculptured stones. Afterwards the members visited the Castle by kind permission of the Rev. Dr. Plummer, and were shown over the building by the Rev. Mr. Godwin. In the evening, after dinner, a number of the other old parish churches were inspected, and the many charming and interesting views and walks about the city enjoyed.

The company stayed overnight at the Royal County Hotel, and in the morning travelled to Hexham, where, by the courtesy of the Rev. E. Sidney Savage, M.A., the members were conducted over the Abbey by Mr. Charles Clement Hodges, architect. In the afternoon the party drove to Chesters, and saw the Roman station and museum, under Mr. R. Blair's leadership, permission for which had been granted by Mrs. Clayton, of Chesters. Mrs. Clayton also allowed the party to view her private residence, the additions to which form a five example of R. Norman Shaw's work. The train was joined at Chollerford, and the return journey made *via* Riccarton Junction and Hawick. The excursion, from first to last, was full of interest.

LIVERPOOL SCHOOL OF ARCHITECTURE AND APPLIED ART.

THERE was opened at the Walker Art Gallery, Liverpool, on Friday last, the 14th inst., an exhibition of designs, models, and examples of craftsmanship executed by the students of the Liverpool School of Architecture and Applied Art, the Lord Mayor performing the opening ceremony.

Professor Simpson, who is the director of the school, in speaking of its work, said that 73 students had attended the day, and 171 the evening classes during the past session. There was one point to which he would like to refer, and that was the fact that a special aim of the school was to pay great attention to the arts and crafts allied to architecture. In Germany the manufacturers and others were in close touch with the higher technical schools, and it was to that fact that the great progress made during the past few years was in a large measure due. He thought that those of Liverpool should take advantage of the training given, and still being given to students in that school.

The Lord Mayor, in opening the exhibition, said that the Corporation had given £1,000 to the school, and had made a further grant of £400, in consequence of the good work done. The Corporation were wishful to encourage such progressing work, and the fact that the work was progressing was emphasised by the increase in the number of those who attended the school. There were no fewer than 20 different crafts taught, and they were really trying to help that which was beneficial to the trade of the city. They wanted to encourage local talent; the school was one of the first of its kind in the country. He hoped that those who were manufacturers, etc., would remember the school, and would give preference to those who had been skilfully taught there.

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HALF-TIMBER STRUCTURES ON THE HIGH BRIDGE, LINCOLN.

AT a meeting of the Lincoln City Council last week Messrs. Watkins & Son, architects, presented a report upon the old "half-timber" buildings on the High Bridge belonging to the Corporation. They said that the buildings appeared to have been originally erected as three small dwelling-houses, each with a single room on the ground floor, and in the corner of each room was a steep and narrow staircase leading to the rooms above. Each storey above the ground floor overhangs that below it by about 15 in., so that the top or second storey overhangs the outside face of the ground floor about 2 ft. 6 in. All the constructional timbers were of English oak, and were originally exposed to view on the outside and inside faces of all the walls, and, fortunately, nearly all of them still remain. The architects considered that there would be no insurmountable difficulty in restoring the building to its original form and appearance, and when that was done it would again present a picturesque feature in the street line of the city. While retaining the shops they would endeavour to restore the building in all other respects to its original condition and appearance, except as regarded the steep and narrow staircases, for which they would substitute more suitable staircases in the annex they proposed to build at the back. It was difficult to estimate the cost of the restoration, but were of opinion that it would be about £1,000 or £1,200.

The Mayor (Mr. Councillor C. W. Pennell), said he thought there would be no two opinions as to the advisability of restoring a building so unique in character, and there was this about it—that if something was not done shortly the old place would fall down. If the restoration was made considerable advantage would accrue to the Corporation by the enhanced letting value of the property.

It was unanimously resolved to have the old buildings restored.

"NEW ART" FURNITURE AT THE VICTORIA AND ALBERT MUSEUM, SOUTH KENSINGTON.

THE nation is indebted to Mr. George Donaldson for his generosity in presenting to the Victoria and Albert Museum a collection of "New Art" Furniture. Mr. Donaldson was in 1889 elected vice-president of the Jury of Awards for furniture at the Paris Exhibition, and was unanimously chosen again last year as vice-president of the recent Paris Universal Exhibition. In the process of making the awards Mr. Donaldson noticed that in the past 11 years a remarkable and distinct art development had taken place all over Europe, causing a mercantile change of quite exceptional proportions, but one of which England was practically unconscious. On learning that the Victoria and Albert Museum had insufficient funds for allocation to this particular branch of Art and could not therefore place before English designers, craftsmen and manufacturers, the choicest European examples of the "New Art" production in furniture, Mr. Donaldson wrote to the president of the Board of Education and offered to purchase a selection of the best examples of "New Art" furniture in the Paris Exhibition of 1900, and to present them to the Victoria and Albert Museum. His object was to exhibit them in the first instance at the Museum and then to send them for exhibition successively to our chief manufacturing towns in order that the manufacturers and artizans of this country could see what other nations are striving for in the direction of original design not based upon past productions. This offer was gladly accepted and the collection is now arranged in the Tapestry Court of the Art Museum.

The largest and most striking example seen on entering is the side of a rooom with a settle in marquetry with ingenious selections of natural woods, lending themselves by their grain or marking to the designs of the trees, figures, etc. This work is German and made by Herr J. J. Graf of Strassburg. The marquetry is by Herr C. Spindler and represents subjects taken from old Alsatian legends. Visitors to the Paris Exhibition will remember the rooms furnished in the new style by Monsieur Bing and will recognise the chairs and table as coming from his workshop. The bedroom suite, consisting of a bedstead, wardrobe, and commode, all enriched with carving and inlay of flowers, was manufactured by MM. Pérol Frères.

The work of Monsieur Louis Majorelle of Nancy, who has obtained the highest distinction in France, is represented by three cabinets of unique form, a table, an armchair, and two trays. Three chairs with seats and backs of leather, cut and embossed with "New Art" ornament are from the hand of Monsieur A. Darras. Monsieur Emile Gallé of Nancy, so well known for his admirable art work in glass, has been turning his attention to the manufacture of furniture in the new style, and his work may be seen in five specimens of furniture, namely, a tea-table, a chest of drawers, a lady's work-table, a screen and a tray, all inlaid with flowers and leaves. The chest of drawers is further inlaid with a large butterfly partly in mother-of-pearl. A writing-table, two chairs and a stool in light wood, with gilt metal mounts and plush coverings are from the workshop of Monsieur E. Bagués.

One end of the room is given up to furniture from Hungary and Norway. The work of the former country is represented by two large cabinets, a table and two chairs, designed by Herr Edmund Farago, whilst the characteristic art of Norway is clearly seen in the two chairs made by Mr. C. G. Christensen. Between the Hungarian cabinets is a large open tapestry hanging, from the tapestry works at Cristiania, and over Monsieur Gallé's furniture is a woven picture of Spring, after a design by Monsieur E. Grasset.

The four show-cases contain small objects of art in metal, pottery, and glass, illustrating the new movement. One of the cases is filled with the lustred glass of Lötze of Klostermühle, and the painted and cut glass of Monsieur Emile Gallé of Nancy. A second case contains examples of the wares made by Herr Zsolnay of Fünfkirchen, and Prof. Max Läuger at Karlsruhe. The third case has a miscellaneous collection of pottery from Copenhagen (Royal Porcelain Factory), Rorstrand, Rookwood (Cincinnati), and Boston (Grueby ware). The work of the French potters, MM. Chaplet and Bigot, is also represented in this case. The fourth case is filled with metal work, chiefly in the form of door furniture; many of the designs are by Monsieur Charpentier. The specimens of silver mounts for bedroom furniture are made by Monsieur Bing, after designs by Monsieur Colonna. The large stoneware vase on the pedestal is from the factory of Monsieur Georges Hoentschel, and the modelling is by Monsieur F. Deschamps. The stencilled frieze round the room has been designed and made by Mr. T.-T. Blaylock, a student in training in the Royal College of Art, South Kensington.

FIRE PREVENTION COMMITTEE'S VISIT TO HAMBURG AND ANTWERP.

IN continuation of the British Fire Prevention Committee's participation in the Berlin Fire Congress, a visit, by special invitation, was paid to the city of Hamburg, where a deputation of the society, comprising Mr. Edwin O. Sachs, Mr. Farrow, Mr. Goad, Mr. Marsland, and the Assistant Secretary, were exceedingly cordially received by the head of the Building Police (Herr Ohlshausen), the chief of the Fire Brigade (Herr Westphalen), and other representatives of the departments concerned in the work of particular interest to the society. The visitors were first received at the headquarters of the Fire Brigade, where an elaborate demonstration of the work of the brigade was given, and the exceedingly scientific, as well as the smart, way in which operations were conducted were highly appreciated by the deputation, who in this case were again accompanied by Mr. Gamble (2nd officer of the Metropolitan Fire Brigade), Major Fox (of the London Salvage Corps), and their foreign honorary corresponding members (Count Ferdenandez, of Oporto, and Commander Welsch, of Ghent). A number of the new fire stations of the Hamburg brigade were then visited, the arrangement of the route being such as to give the visitors an opportunity to study the various forms of building construction employed in this city. After this various warehouses in the free port were carefully examined, the selection of buildings presented being so arranged as to give the deputation an idea of the various building materials

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employed, after which the docks were visited, and a demonstration of the working of a fire float was given. Finally a large American liner was visited. In the evening the party were entertained at dinner, when Mr. Sachs had an opportunity of expressing the committee's thanks for the reception.

In conclusion of the deputation's visit to the Continent, they informally visited the scene of the large fire at Antwerp, where the enormous bonded warehouses, covering some seven acres of ground, comprising many structures of five floors' height, had been entirely gutted. Altogether the journey proved highly instructive, and the committee's report promises to be interesting both to public officials, architects, and firemen.

NEW DRAINAGE BYE-LAWS FOR LONDON.

THE reply of the Local Government Board to the objections taken to the new drainage bye-laws drawn up by the London County Council has been received by Mr. Mark H. Judge. It is as follows:—

"Whitehall,
"June 17, 1901

"Sir,—I am directed by the Local Government Board to advert to your letter of November 16th last, forwarding a letter signed by thirty-four medical men, architects, and others relative to the bye-laws proposed by the London County Council, with respect to the drainage of buildings, and to state that after careful consideration of the representations contained therein, the Board have not sufficient grounds for withholding approval of the bye-laws in their present form. They have accordingly approved the series.

"Your obedient servant,
"W. E. KNOLLYS,
"*Assistant Secretary.*"

This means the introduction for the first time in London of several regulations to which strong exception has been taken by many leading sanitary experts in the medical as well as in the architectural professions. The bye-law which provided that all soil-pipes should be placed outside buildings is repealed.

The new regulation is that soil-pipes shall be outside "whenever practicable," and one of the main objections urged against the new bye-laws was their want of definiteness. The memorial to the Local Government Board, which was signed among others by the following architects:—Mr. Edwin O. Sachs, Mr. Halsey Ricardo, Mr. E. H. Prior, Mr. W. W. Gwyther, and Mr. Mark H. Judge; and by the following medical men:—Dr. Henry Kenwood, H.O.H.; Mr. Jonathan Hutchinson, F.R.S.; Dr. Roger-Smith, Dr. W. S. Playfair, Sir Joseph Fayrer, Dr. Danford Thomas, Dr. Willoughby, D.P.H.; Dr. Edward Blake, Mr. Horatio Symonds, F.R.C.S.; and Dr. A. O. Grosvenor, urged that such terms as "whenever practicable," "as near as practicable," "where any other mode of construction may be impracticable," "except where unavoidable," "equally suitable," which appear repeatedly in the proposed bye-laws should be, avoided, and, if used at all, surely the authority to decide the matter should be stated, or endless disputes must arise as to what is "practicable" "unavoidable," or "equally suitable."

The reply of the County Council to this criticism was that "it was found practically impossible to lay down definite rules of construction which would apply in every case, and the terms in question give *elasticity to the bye-laws*, without which their enforcement would be found extremely difficult, if not impracticable." To this Mr. Mark H. Judge rejoined:—"Many besides the London County Council are aware that it is 'practically impossible to lay down definite rules of construction' in many of the matters attempted to be dealt with in these bye-laws, and will, I am satisfied, agree with me that until it *is* practically possible to do so, there is no justification for making bye-laws at all. To adopt bye-laws with an elasticity which is determined by the will of a public sanitary inspector, would be to create a public danger, and, if permitted, will make the sanitary administration of the metropolis, which is already oppressive, a tyranny, which in the interest of the community will have to be resisted."

VENTILATION AND WARMING.

AN interesting little pamphlet on the improved Plenum method of ventilation has been sent us by the author, Mr. William Key. Mr. Key describes the method in detail. He says:—

"The first duty which devolves on me on the plans of a proposed building being put into my hands to design a scheme for my methods of ventilation, is to examine and discover the best position from which to draw the air supply; this having been ascertained, *the air is drawn from a source which is known*, and no air can enter the building from any unknown or undesirable direction, no air can leak inwards from crevices or doorways, but pure air leaks outwards continually. No gases from the soil upon which the building is erected can enter it, nor can sewer gas from leaky or faulty soil pipes enter the apartments—pure air leaking into any such chinks. The air admitted into buildings has been ascertained to be freed from about 90 per cent. of the dust, smuts, and germs in the outer air; this is effected by my damp screen. Fog is also completely removed by the screen. My screen dries the air in summer when the air is frequently saturated with moisture; it is thus cooled and gives to the occupants a sense of exhilarating fresh-airiness. During winter, when after continuous dry or frosty weather the air becomes too dry for easy respiration, the air is humidified while passing through my damp air filtering screen.

"After passing through the screen the air is warmed during the winter in its passage through the principal or primary air warming batteries to a temperature of say 58 degrees Fahr., and arrangements are provided for the immediate increasing or reducing of the temperature. Should the sun on a winter day suddenly appear and considerably raise the temperature, or when it dips early in the afternoon and becomes colder, the alterations are met in a simple way, and without interfering with the valves admitting steam to the warming apparatus. The arrangement consists in providing air tempering doors which can be opened a few inches or altogether as the circumstances warrant.

"The air, after it has been purified, dried, or humidified, cooled or comfortably warmed, is propelled by air propellers into the main air passages. These have branches leading off to every room separately and each room is provided with a separate and secondary air warming apparatus, so that each room may have a temperature suited for the purpose to which the room will be used. For life class-rooms 70 degrees Fahr. is required, for babies' rooms 64 degrees Fahr., and for ordinary class-rooms from 55 degrees to 58 degrees Fahr., while wards of hospitals require 62 degrees to 64 degrees, and operating theatres say 70 degrees Fahr. All these temperatures can be maintained in sick and surgical wards for weeks and weeks together, without the variation of half a degree, and that while renewing the air of the wards eight or ten times every hour, or, if required, alternating temperatures can be provided for as easily as uniform ones."

In conclusion Mr. Key urges the following advantages of his system:—"My improved Plenum method of ventilation provides in a constant and positive manner a sufficient quantity of air to each person, and of a proper quality; of a suitable degree of temperature and humidity; properly distributed in equal proportion to each individual; without producing any discomfort or feeling of draught; with proper provision for complete removal of the air which has been exhaled by any individual, and in such a way as to maintain full bodily and mental vigour; in such a way that the whole process is reasonably practicable and economical; that the purest air available in the immediate neighbourhood can be selected and supplied to every apartment after being filtered, washed, warmed or cooled to a suitable temperature; that the air entering each room is distributed to all parts of the room and to each inmate; that the air of apartments, halls, etc., can be changed up to fifteen times per hour, or more, without producing discomfort, draughts, or depression of health. That a marked improvement is effected in the alacrity and mental vigour both of teachers and scholars, as compared with results produced under other systems. That all the air contamination by respiration, exhalations from skin, clothing, etc., is completely driven out of each room. That the method of working is so simple that special intelligence, care and vigilance is not needed. That it requires no more skill than for an ordinary hot-water

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heating apparatus, and is much safer, as no part of the pipes or plant can become frozen, repairs to ordinary hot-water apparatus are frequent and expensive. That not more than two attendants out of each 100 engaged by proprietors of buildings to work the apparatus have been incompetent. The initial cost is very little in excess of any of the other methods, whereby no guarantee can be given that even one change of air per hour will be maintained, in all weathers.

"The whole air within a building ventilated on my method is under a slight pressure in excess of outside atmospheric pressure at the time. I designed my pressure method so that it might become a valuable assistant in preserving the purity of the air within rooms, and it is most serviceable as a prevention of draughts. I can govern the air supply to any compartment with precision, and separately from others, and can increase or decrease the volume to any part of the building at will. I can control the distribution as a mariner by the rudder controls his vessel; I can curb it or let it go free, as a driver controls the speed of his engine, or shut it off altogether from any room at pleasure."

TRADE NOTES.

A FIRE recently occurred at the Merchants' Dining Rooms, Market Street, Manchester, a building erected from designs by Mr. Charles Heathcote, F.R.I.B.A. The fire broke out in the smoke room after the building was closed, and, evidently, raged very fiercely, as all the fittings, including marble tables, were destroyed, the tiles and faïence were demolished and stripped off the walls, and the concrete of the floor above was calcined in parts to a depth of 2 inches. Notwithstanding this, the fire was confined to the room in which it originated, being successfully resisted by the fireproof plate walls which formed the partitions. But for these fireproof plate walls the fire might easily have extended to other parts of the building, and, possibly, with very serious results. All the partitions in the building were of fireproof wall plates erected by the Fireproof Plate Wall Company, Limited, 3 Macdonald's Lane, Corporation Street, Manchester.

THE GENERAL ELECTRIC COMPANY (1900), LIMITED, Queen Victoria Street, E.C., have just issued a trade list respecting their "Geeko" telephone, an instrument specially designed for fitting to the electric bell pushes in private houses and offices. There is the "kitchen" telephone for fixing in the kitchen or servants' hall, for use in conjunction with the "Compact" or "Portable" telephones. The latter can be carried from one room to another, and is also adapted for invalid use as the ear and mouthpiece are on one handle. Then we have the "Desk" and "Study" telephones, which indicate by their names their purpose; the former is useful for calling between two offices as it is provided with a bell. Other telephones for communicating between two buildings not more than a quarter-of-a-mile apart, such as private houses, estates, offices and warehouses etc. are also illustrated, including the "Wall," the "Table," the "Combination," the "Office," the "Manager," the "Stores," the "Secretary," the "Cashier," the "Director," the "Bailiff," "the "City," and the "Governor." The prices affixed to all these telephones are extremely moderate, and we should add that the instruments are all of the best British make. We have also received from the General Electric Company, an effective show card of these "Geeko" telephones.

MARYHILL RUBBER WORKS are at present undergoing extensive additions. Great care is being taken with the ventilation, which has been entrusted to Messrs. Cousland & Mackay, ventilating engineers, 150, Hope Street, Glasgow.

MESSRS. GOODALL, LAMB & HEIGHWAY, LIMITED, Manchester, have just completed at the new kursaal, Southend-on-Sea, the largest spring dancing floor in this country. It is covered with 1-in. tongued and grooved parquetry, with a specially-designed centre of oak, walnut and sycamore in the form of a double star, and the filling is what is known as the ship-deck pattern, with the joints matched. The border is about 3 ft. wide of a bold pattern in oak and walnut. The portion where the public would stand on the outside of the border is laid with the ordinary herring-bone pattern, and is on the same level as the dancing floor. Mr. George Sherrin, of London, is the architect for the building. The large floor which Messrs. Goodall, Lamb & Heighway, laid at the Winter Gardens, the Tower, the Imperial Hydro, Blackpool, and also the one they have just completed at Smedley's Hydro, Matlock Bath, although considered exceedingly large floors do not come up to this one by several hundred feet. The springs used for this floor are what the firm have found after very long experience in manufacturing these spring dancing floors to be the best, and are the ordinary carriage spring, made to the firm's own specification, of the proper strength necessary for the size of the floor. The deflection of the springs cannot exceed ½ in., and they have been so arranged that they cannot be strained.

THE Archbishop of Canterbury laid the memorial-stone on the 17th inst. at Wakefield of the cathedral extension now being carried out as a memorial to Dr. Walsham How, first bishop of the diocese. The cost of the extension will be £40,000.

THE Bishop of London consecrated the new church of St. Columb, in Lancaster Road, North Kensington, on the 15th inst. The site of the new church cost £2,000, and the building itself £7,000, and is provided with 500 chairs.

ON Wednesday, the 12th inst., the Bishop of Crediton laid the foundation-stone of St. Simon's Parish Hall, Plymouth, which will be temporarily used for services while the new church of St. Simon (to seat 1,000) is being erected. The contractor is Mr. Ambrose Andrews, of Plymouth, and the architect, Mr. Harbottle Reed, of Exeter, from whose plans the new church will shortly be commenced.

LATE ADVERTISEMENT.

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The British Architect.

LONDON: FRIDAY, JUNE 28, 1901.

THE ARCHITECT AS BUILDER.

IT is impossible for Professor Lethaby to be otherwise than interesting and clever, and in his paper which he read at the R.I.B.A. meeting last week he was not only that, but instructive as well. For his information respecting building in mediæval times, and especially in connection with Westminster Abbey, was really informing, and it is to be hoped that the full account he has prepared of the building of the Abbey will see the light in due time. But when one comes to draw conclusions from the paper—to try and discover what the author is driving at—we confess to some little mystification. At first sight one could almost imagine the Professor was trying to prove that the best method of building was to abolish the architect, and hand over the work to an associated guild of craftsmen, or some such similar body. But, after a careful perusal of the paper in print, one gets a better insight into the real drift of the author's meaning.

It could hardly be possible for anyone conversant with modern building to imagine for a moment that the building methods of mediæval times could in any way be applicable in these days. Perhaps we are not all so enamoured of those mediæval methods as Professor Lethaby seems to be, and we think Mr. Leonard Stokes voiced the opinion of not a few when he referred to the old muddling days when the builders "began to do something they wanted to do, and ended by doing something they did not want to do." We agree with Mr. Stokes that so far as architecture was concerned, there was a good deal of muddling in those "good old days." It was all very charming, no doubt, as Mr. Stokes says, "when John the mason, having raised the walls of a building, called in Bob the carpenter to consult with him as to whether he should put on a stone roof, or a wooden one," and when after finding out that the building was not strong enough to carry a stone roof, Bob was called in to put on a wooden one. All the same we should most of us agree with Mr. Stokes that this was not a design, but a muddle. The methods of mediæval building are of very great interest to the architect, but more as historical facts than as processes adaptable in any way to the present-day requirements. We may admire the wonderful skill and excellence displayed in the workmanship of those days, but modern conditions admit of no such leisurely and antiquated methods of undertaking and carrying a job through. The past is past, and the lessons it has for us are those of principles, with a modern application, rather than of the adoption of actual ways and processes.

So far as we can read the main argument in Professor Lethaby's paper it is that architects should have more of the practical knowledge and spirit of the real craftsmen of the old days. This is a legitimate hope and aim. We entirely agree with the Professor that an architect cannot have too intimate and practical a knowledge of building, nor be to closely allied in sympathy and spirit with the craftsmen who carry out his designs. He may also learn something from the workman, but there is no need for our architects to become journeymen joiners, masons, painters, or plasterers, to ensure that the artistic handicrafts shall find due expression in their buildings.

The final and only practical conclusion to which Professor Lethaby leads us is that a sound education in building is a very real and practical necessity for the architect—a proposition to which we may all give hearty assent. But at the same time the day has gone past when an architect may be just a clever, ingenious building operative, and architectural design a haphazard, pick-it-up-as-you-go-along sort of affair. That every architect worthy the name ought to be a builder in the proper sense of the word, goes without saying. There is nothing more to be desired for the art of architecture than that architects should know and appreciate more thoroughly the need for a true revival of the knowledge of the handicrafts connected with building *in their own personal experiences*. The architect should be the craftsman who, whilst he cannot hope to build all his buildings with his own hands, yet can still make himself absolute master of the situation by reason of his perfect knowledge of his craft. Where this is the case we shall surely find how carefully each detail is studied with reference to material and execution, how that all the work is scrupulously watched and examined ere it is allowed to pass, and how everything is specially designed and executed—not in theory, but in actuality—under the architect's own personal supervision.

Of course, this sort of conscientious attention to the carrying out of one's design in all its practical details, so that it may everywhere and in all its parts bear the mark of the author's own artistic individuality, means that an architect shall not undertake more work than he can personally and properly supervise. Some one has said:—"If your choice is entirely for your art you will certainly be poor, because much work cannot be properly done by one person." We do not know about that. It is a singular feature of these later times that men of genius or great ability flourish exceedingly, and gifted people find much acceptance in the worlds of literature and art. But such consideration has nothing to do with the work of the conscientious workman, even if he be an architect. And without such conscientiousness architectural ability, however great, is prostituted, and architects and their art are alike discredited.

JOTTINGS FROM CARRARA.

By HARRY HEMS.

IF a two-foot rule is put across the map of Europe, it will be found that the direct distance between London and Carrara, as the sea-gull is supposed to fly, is exactly 700 miles. Probably, as the traveller usually goes, it is nearer 1,000. A third-class through-ticket, good for 17 days, and with the option of stopping just where one likes, anywhere during that period of time, costs £3 2s. 9½d. Thus, if you leave London Bridge, say on Saturday evening, by the 9 o'clock train, you are landed at Carrara Station at 17.40 on Monday afternoon next. All through Italy the clock is numbered continuously for 24 hours, so that "17.40" to the uninitiated means twenty minutes to six in the afternoon. Leaving London by the train in question one reaches Paris just after seven in the morning, and the early drive across the City, at this time of the year especially, to the new terminus of the Paris, Lyons & Marseilles Railway in the Boulevard Diderot—a ride beneath the shade of the green trees that line almost every street for the whole route—is always most delightful. Further, you practically have it all to yourself, in common company with the litter-collector and the street-waterers. The fast train (3rd class corridor carriages are attached for the convenience of through travellers) does not start until 11.50 a.m., so, after a comfortable breakfast, there is plenty of time not only to inspect the new station in course of erection, and its exceptionally ornate tower, but to stroll as far as the Arch de Triomphe one way and to Notre Dame the other.

If you are not in a deuce of a hurry—as probably you are not!—Macon will be your first stopping place. This is reached at 8.43 p.m., nearly 24 hours after leaving London. There, if you do as I did, you will put up, for the night, at Mons. Lafay's "Hôtel de Genève," just outside the station yard (right hand side), where you may have a bedroom, fit for a prince, for 2 francs, and an excellent dinner, inclusive of a bottle of fine old crusted Macon wine, for three or four more. But if you elect to go through to Modane, the border station—thus missing, in the dark, all the lovely landscapes about Aix le Bains, where the line skirts the lake for half a dozen miles or more, and the picturesque Alpine scenery along the course of the Arc, through Chambery, and so far as the western entrance to the tunnel at Mont Cenis—you will arrive at Modane at 3.30 the following morning. Nearly opposite the station there is the "Grand Hotel International," where a night porter is kept, and, if you bargain for your room, you have it for 3 francs, but, if you trust to Providence, will assuredly find it charged for 5s. in the bill next day.

Everybody has their own way of doing, and, naturally, I have mine. Some 37 years ago I crossed Mont Cenis—*a pied*—a working sculptor, with my tools upon my back;

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returning home—something very like penniless—after "studying" at the feet of the great and small masters in Italy. So, that history might repeat itself, I resolved to once again cross the great pass upon "Shanks' Mare." To send one's portmanteau forward from Modane to Bardonecchia Junction (incorrectly spelt with two "n"s in the current issue of Bradshaw's "Continental Guide") on the other side the border where it can be reclaimed in due course, is simplicity itself. There is a diligence running every day from Modane to Lanslebourg—the village situated at the foot of the pass—but I preferred to walk the 18 miles or so, passing *en route* quaint Termignon. At Lanslebourg the Hotel Vve. Valloire Alexandre is kept by a worthy old lady, who supplies a clean chamber for a couple of francs, and a dinner cooked to a nicety, for two or three more.

The actual ascent of the mountain commences at the bridge over the Arc, a few hundred yards from the hostel in question. If you start at early morning—say at 7 o'clock—after going up inclined planes, and through pine forests for some three hours bleaker land and partial snow is reached. In places the latter lies about all the year round. I saw it, less than a fortnight ago, standing up perpendicularly, fully 8 ft. high, in a spot where it had been cut through on each side of the path leading to the frontier fort upon French territory. An hour later, the inscribed grey stone marking the line of demarcation between the two countries was reached. So to add emphasis to the situation I stood with one foot in Italy and the other in La Belle France, and struck a light! Four hours further trudge across the summit—inclusive of a noonday meal of mountain cheese and wine at the "Albergo Rossazza," the one place of entertainment ("albergo" means hotel) upon the top of Cenis, a rough building situated right opposite the lake that crowns the summit—brings one to the Piedmont side, where amidst scenery it would be hard to beat, the descent commences. Susa is reached in another four hours, and so a happy 12 hours trudge is brought to end in good time for the evening's meal. At Susa the first Italian town to welcome the visitor, the "Albergo del Sole" may be stayed at Prices, however, must be pre-bargained for, or the bill will be rather heavy next morning! Turin is undoubtedly the finest city in Italy, and should not be gone through without a stop. It is probably one of the best built and imposing places in Europe. Electric trams take one here, there, and everywhere for a penny the trip.

On we go again, and presently arrive at Genoa—"Genoa the Superb," as its residents admiringly call it,—Genoa, with its quarter of a million inhabitants; its quaint old narrow streets—all too fast, alas! disappearing before the march of improvement; its half a dozen grand churches; and its Campo Santo, the finest cemetery in all the world, must not be missed. The latter is reached, with a twopenny ticket, by the Tramire di Genova Elettriche. Greenwood Cemetery, outside Brooklyn, overlooking New York Harbour, is the most lovely cemetery I know in the New World, just as Genoa's is the finest in the Old. In the centre of Genoa, as well as about the docks, old buildings have been cleared away by the acre, and rebuilding upon a grand scale is taking place at every hand. The grey granite columns that support the arcades, so common there, as at Turin, and in a lesser degree somewhat at Alessandria, are well worth notice. They generally measure some 20 ft. by 3 ft. 3 in. diameter, and are invariably monoliths. Sometimes, indeed, the bases and capitals are also all in one with the shafts. The only instance of the same sort of treatment in England, I remember, are the four Dartmoor granite columns, of Elizabethan date, that support the front of the old Guildhall at Exeter. Their capitals and bases also are all at one with the columns. From Genoa to Avenza (the modest junction, three or four miles away, for Carrara) is a slow run of exactly five hours, the line skirting the uncertain Mediterranean the whole way. The Italians say this sea is like a beautiful woman, for it can never be depended upon! But, although the scenery is grand beyond description, very little is seen of it, for the train goes through nearly 50 tunnels *en route*, and just where nature delights in its wildest moments to please the eye the train generally rushes into a darkness that may be felt, for one is almost choked by the smoke from the brikette-burning fires of the engine.

At last, Carrara, nestled cosily, as it is, at the foot of its solid marble mountains, is reached. Carrara, with its nearly 350 quarries, all in active work, has a population of over 20,000 inhabitants, and quite as many more resident in its outlying villages. Fully half of the actual resident breadwinners toil either up in the quarries, in the saw-mills, the masonry yards, or carving studios, of which Carrara is absolutely chock full. Everywhere, from early dawn until late at night, Saturdays and all (yea, and on Sundays in many of the mills), the sound of the saw or of the hammer is heard continuously. Carrara is the centre of the white marble trade for all the wide, wide world. It has been so for some thousands of years, and is likely to continue so until the end of time.

And, after nearly 40 years' absence, what, do you ask, are my impressions of the place? Well, the reply undoubtedly is that the utter waste of material is painfully apparent at every hand. Marble, in block or in *débris*, lies about everywhere—much of it, apparently, never likely to be used. It seems as if the productive powers are over-great. If quarrying were to be entirely stopped for a year there would still be plenty and to spare of blocks, sufficient for all demands. Next to the evident waste of material, the primitive way of working strikes the visitor. The marble is quarried upon the crudest principles, and there are often some hundreds of tons of waste for every large block obtained. For the last 10 years a railway, running direct from Marina (the port some six miles west of Carrara), runs by inclined roads right up the sides of the mountains, and shunts itself with sidings in touch with most of the main quarries. But a very large proportion of the blocks are still brought down upon heavy carts made almost exactly upon the same lines as were those used over the selfsame ground by the ancient Romans, and drawn by teams of ten or a dozen patient, long-horned, light-coloured oxen, yoked to their loads after the fashion we have read about in Holy Writ. In the mills steam is unknown: all is worked by water-power. For lifting purposes I have—in all the yards put together—only seen one overhead traveller. That is at Messrs. Walton, Gooddy, Cripps & Co.'s place near the railway station, and this one evidently has not a lifting capacity of over 5 or 6 tons, whilst some of the blocks there must weigh nearer 50. Yet they apparently have to be lifted by manual labour—mainly by iron crowbars, worn bright as engine fittings by constant use in the hands of lithe and swarthy men, who throw all their bodies into the heavy manual work. They do this, in spite of the burning sun, with a will and in a way I never saw anyone in England even attempt Like sailors who hoist a sail or lower a yard, singing the while in unison, "Blow the man down," the men take their time from their foreman, and to musical cries use their bars altogether with such effect that immense blocks are moved about with most astonishing quickness. Of lifting jacks the only ones I have seen in use are the old-fashioned square wooden jacks that were common in England when I was a boy. Indeed, these seem to be used only sparingly, the bar, with active human hands at end, being generally preferred.

Great blocks of marble almost as big as small rooms, are got upon runners of timber, the latter curled up at each end in skate-iron fashion. Under these, well soaped skids are thrust and changed alternately, as with a long chain ahead, pulled by a dozen oxen. The gigantic mass goes merrily along the road, gliding easily and noiselessly thereupon, as if on a slide. The cheapness of actual human labour at every hand is almost apparent, as it must have been at the Pyramids in the days of the Pharoahs.

But, there, even if this *is* the longest day in all the long, long year—time forbids that one should go on for ever! During the ten happy days I have just spent in Carrara, many useful notes have been made, and from these extracts shall be given another week.—*Au revoir*!

ALBERGO-GARIBALDI.

Carrara, June 21, 1901.

IN relation to the widening of Blomfield Street, City, the Court of Common Council have adopted an arrangement for acquiring the ground needed to widen the road in front of the Ophthalmic Hospital for £13,750 to include all interests.

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A MODERN VIEW OF LONDON CHURCH ARCHITECTURE.—XXI.

By T. F. BUMPUS.

(*Continued from page* 415.)

AT St. Columba's the stained glass in the pair of eastern lancets is very disappointing, the subjects being confused and the quarries very vulgar and coarse. For windows at such a distance from the ground, the simplest, broadest treatment—preferably that of single effigies as at St. Chad's—should have been pursued. Some glass of recent manufacture has been inserted in the triplet of two light windows below the northern transeptal rose, but the best vitreous decoration in St. Columba's is the majesty which in brilliant tinctures fills the circle surmounting the double tier of western lancets, and that in the two lancets of the baptistery, where the iconography—setting forth in parallelized scenes, the Fall and the Redemption—is curious. Thus, commencing at the bottom in the left hand lancet, we have the Creation of Eve (a somewhat difficult subject, and occurring, the writer believes, in a window executed by the same artists, Messrs Clayton & Bell, at the east end of Holy Trinity Church, Ventnor), paralleled by the Nativity. Eve offering the Apple to Adam typifies the Temptation; the Expulsion from Paradise is placed side by side with the Procession to Calvary, while Abel's Sacrifice balances the Crucifixion. It is worthy of remark that the subjects composing this interesting and instructive series are placed in squares and not in vesicæ or medallions as was the custom *de rigueur* when the mosaic style of vitreous decoration was employed during the earlier stages of its revival. Perhaps such treatment—pursued of late by Messrs. Clayton & Bell in the lancets of the choir aisles at Salisbury, in the Chapter House at Lincoln and elsewhere—has the merit of novelty and of allowing fuller scope for the exhibition of groups, but it must be confessed that the idea of verticality which is the leading one of Pointed is to a considerable extent diminished by its adoption.

The student of these two striking and abnormal contributions to the ecclesiology of the metropolis will easily discern that dignity and grandeur of proportion, solidity of construction, and a general air of religious impressiveness have been the qualities mainly insisted upon in their capacity of town churches. Upon elaboration of detail, external or internal, little or nothing has been expended, and this is in neither case detrimental to the *ensemble*. Indeed, in none of the churches composing the group that has formed the subject of the last few papers, can it be said, that the altar has been gilded at the expense of the roof-tree, for except those absolutely necessary at the out-set the instrumenta of divine worship have been provided from time to time as means permitted, and, albeit exceedingly simple and severe, are of a style quite *sui generis*, the architect having infused into them a spirit of originality just hitting the happy mean between the hackneyed and commonplace, and the extravagant and bizarre.

Neither in St. Columba's nor St. Chad's has the chancel screen been completed. In both there is a low stone wall pierced with rather large quatrefoils, and this, in the former church, was, until a few years ago, surmounted by a wooden screen of very light open character.

It had a temporary look, certainly from its utter simplicity, but *faute de mieux* supplied that line of demarcation, which we desiderate in a church so lofty and so long as St. Columba's. This screen has now been placed behind the choir stalls and across the arch opening into the north transept, being partially concealed from view on the choir side by a large painting which, as well as some other furniture of a mean description, has found its way into this noble edifice, much, one would imagine, to the disgust of its architect. The presence of the above-mentioned dwarf wall in either church presages the construction upon it of a screen in iron or metal, but from insufficient data, the writer cannot speak with precision upon this point. At St. Chad's a small piece of incised pavement just outside the chancel screen should be noticed.

A gift from Messrs. Clayton and Bell in 1870, it represents St. Chad being sent by Archbishop Theodore on horseback to his labours in his wide Mercian diocese.

In this church the reredos is completed; at St. Columba's but partly so. Both stand upon a stone base relieved with that favourite mode of ornamentation with the architect, a species of trellis work formed of thin strips of dark green tiling. In this portion of the reredos at St. Chad's a trefoil headed niche is introduced, comprising piscina and credence, thus obviating a good deal of passing to and fro on the part of the server, besides being extremely handy for the celebrant whenever he should happen to be deprived of the services of an assistant at the holy table.

The St. Columba's reredos is in two stages, that immediately above the altar presenting a series of small trefoliated niches, and the surmounting one, five shallow arcades, gabled, whose intimated pictorial enrichment will, doubtless, do much to modify the somewhat heavy air worn at present by the composition. The St. Chad's reredos, designed on a less ambitious scale, has sculpture within its five stilted arcades, of the Crucifixion and of those present at it—Joseph of Arimathea, The Centurion, St. Mary Cleophas, and The Magdelene.

It only remains to add that a fine general view of the north side of St. Columba's is to be obtained from the windows of the schools, which together with the clergy house and other apparatus of parochial machinery, constitute the other sides of an elongated quadrangle. St. Chad's is best viewed *en masse* from the North London Railway.

ST. CHAD'S, HAGGERSTON.
(*Jas. Brooks, Architect, 1867-69*).

(*To be continued.*)

NOTES ON CURRENT EVENTS.

BATH has distinguished itself considerably in regard to its architecture, both in times past and in recent years. It is all the more disappointing, therefore, to find such poorresults in the new workmen's dwellings which were formally opened by the Dowager Lady Tweedmouth on Monday last, especially as the chairman of the committee responsible for their erection is himself an architect. Looking at the illustrations which have been published of the new buildings we cannot discover in either plan or elevation any perceptible advance on former methods—in fact, we rather prefer the old elevations to the new! No doubt the new dwellings will be invested with all that is most modern and improved in regard to sanitary arrangements. Indeed, the fact that the site upon which they are built has been raised out of the reach of the disastrous floods which used to literally wash out the inhabitants of the old houses which the new ones are to replace, is itself an important and noteworthy improvement. But we look

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forward with the greatest desire to the advent of really improved workmen's dwellings, which shall be in all respects more convenient and more cheerful to live in, and we are feeling rather hopeless at present of any such real improvement taking place. We suppose such things as these Bath dwellings will satisfy the public generally as to the capacity of modern architects, and yet there are scores of clever men able and willing to advance this important problem. We are told in the account of the opening proceedings at Bath that "flags and brightly coloured fabrics gave the new buildings quite a festive appearance," but such tawdry elements of festivity are poor compensations for the reality of architectural quality.

COMPETITIVE designs are invited by the Chelsea Borough Council for new public baths, which are to be erected in King's Road. Premiums of 100 guineas, 50 guineas, and 25 guineas are offered. In the event of the author of any of the premiated designs being appointed architect for the work his premium is to merge in his commission. Particulars and conditions of the competition are obtainable upon payment of a deposit of one guinea. October 1st is the date fixed for sending in the designs.

A LIMITED competition for designs for a new church at the Cotteridge, King's Norton, Birmingham, was decided last Friday when the report of the assessor, Mr. William Hall, was adopted by the church building committee. The successful design was submitted by Messrs. Jethro A. Cossins, Peacock and Bewlay.

THE competition for the New Liverpool Blue Coat Hospital, in which 14 Liverpool architects were invited to compete in a preliminary competition, has been decided. Four sets of designs were submitted in the final competition and have been adjudicated upon by Mr. W. D. Caröe. The selected design is by Messrs. Briggs and Wolstenholme, of Blackburn. The estimated cost of the work is £90,000.

THE ways of inviting architects to submit competitive designs are many, and some of them quite wonderful. Here is one of the latest we have seen, culled from the *Yorkshire Post*:—

> HECKMONDWIKE S. SAVIOUR'S NEW SUNDAY SCHOOL.—Wanted. Plans for above.—For particulars apply the Vicar.

We give the vicar the benefit of this free advertisement. We hope he will duly appreciate it.

COMPETITIVE designs for 20 workmen's dwellings are invited by the Housing of the Working Classes Committee of the Dudley Corporation. "The Committee offer a premium for the design they may consider best."

THE Swindon Town Council have accepted the design submitted in competition of Mr. A. J. Gilbert, for the enlargement of the town gardens. Mr. Gilbert was awarded the premium of £50.

WE regret to hear of the death of Mr. Larner Sugden, F.R.I.B.A., of Leek, which occurred on Tuesday in last week, his remains being cremated at the Manchester Crematorium last Friday. Mr. Sugden was well known as an architect of more than ordinary ability, whose excellent work has frequently found illustration in the *British Architect*. Mr. Sugden was elected a Fellow of the Royal Institute of British Architects in 1892. But besides his reputation as an architect Mr. Sugden was widely known as a man of advanced views upon religious and social subjects. Since the outbreak of the present war, to which he was earnestly opposed, Mr. Sugden, says the *Manchester Guardian*, has been untiring in his efforts to raise money to mitigate the sufferings it had inflicted. The last few days of his life were spent in urging forward petitions in behalf of Mr. Cartwright, the imprisoned editor of the *South African News*. A simple service was held at the Crematorium, Mr. J. Bruce Glasier, chairman of the Independent Labour Party, delivering a funeral address.

THE following bequests have been made by the late Mr. Arthur Cates, F.R.I.B.A.:—£1,500 to the Royal Institute of British Architects for an "Arthur Cates Prize," and £1,500 to the Architects' Benevolent Society, and £500 to the Benevolent Fund of the Surveyors' Institution, and £500 to the Charitable Fund of the Surveyors' Club. Mr. Cates left personal estate of the net value of £174,064 18s. 11d., the gross value of the whole of the estate is given at £190,949 5s. 11d.

"THIS library will be closed next week for cleaning The Librarian." This notice, posted in a London suburban library, had had the stop after "cleaning" removed by a practical joker. This is surely capped by the line on a poster to be seen last week in the salubrious but otherwise depressing neighbourhood of Ponders End, announcing an open-air concert and fete, which ran: "A number of prominent gentlemen will occupy the chair"! There was no lay devilment about this; it was all the pure unadulterated effort of composer and printer. It is to be hoped either that the chair was of special size and strength, or that the number of gentlemen deputed to occupy it were more prominent in mind and character than in body.

THE building of the new Royal Victoria Infirmary at Newcastle-on-Tyne, which is to be a memorial of the Queen's Diamond Jubilee, has reached a further stage, viz., the letting of the contract. This was placed with Mr. Alexander Pringle, of Gateshead, on Monday, the amount of his tender being £203,000. It will probably be remembered that the new buildings were fully illustrated in the *British Architect* last year (June 15, 1900), the design being selected in a limited competition, in which Mr. Alfred Waterhouse, R.A., was the assessor, and the successful competitors Messrs. W. Lister Newcombe, of Newcastle, and Mr. Percy Adams, of London, who were duly appointed joint architects for the work.

TENDERS for the Leeds new Market Hall, for which Messrs. Leeming & Leeming are the architects, were accepted on Monday by the Markets Committee of the Leeds Corporation. These amounted in the aggregate to £101,329 5s. 11d. The contract for the masonry was let to Mr. J. F. Wright, of Leeds, his tender amounting to £51,083 18s. 3d., and the carpentry work was given to Messrs. William Nicholson & Sons, of Leeds, their tender amounting to £20,799.

THE Rector of Bath appeals for subscriptions to the fund for the further restoration of Bath Abbey. The rector says:—"The restoration of the famous west front has already been completed. Of itself this work has been no small one. A front erected four centuries ago, containing some 70 figures, and representing Jacob's Vision at Bethel, accredited to a dream of Bishop Oliver King, might have meant an expenditure heavy indeed; but this has been avoided by the careful and conservative repair executed by the architect, Mr. T. G. Jackson, R.A. As it is, however, the cost of this and other necessary work is from £3,000 to £4,000. We now appeal for funds for further repairs, which the architect regards as urgently necessary. These are structural, and involve the restoration and in some cases rebuilding of some of the flying buttresses, which are so vital and beautiful a feature of the church. The exact estimates have not yet reached me; but it is hoped that a sum of £5,000 to £6,000 will cover the whole of the present expenditure on the building. In support of this appeal I may urge that the historic associations of Bath Abbey date from A.D. 676; that it was the scene of the coronation on Whit Sunday A.D. 973 of King Edgar; that next to Westminster Abbey it is said to be most famous for its monuments to the illustrious dead; and that, in its present condition, it is quoted as a noble specimen of perpendicular architecture and one of the very last great churches built in England previous to the Reformation."

THE foundation-stone of the new "Baltic" was laid on Tuesday afternoon by the Lord Mayor. This is to replace the old building in Threadneedle Street which was required for other purposes. The new building is being erected by a syndicate consisting of members of the "Baltic" and of the London Shipping Exchange, and

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occupies the site of Jeffrey Square, covering a superficial area of 30,000 feet, the whole of which is freehold. The building will contain, in addition to a large exchange, a reading-room, club-rooms, and arbitration-rooms, and it is antipated there will be accommodation for at least 3,000 members. The architects are Messrs. Smith and Wimble.

THERE is an interesting historical reference to the acoustics of Westminster Hall in the recently-issued report of the Joint Select Committee, on the presence of the Sovereign in Parliament, to which, remarks the *Westminster Gazette*, no allusion appears to have been made. This was the occasion upon which Sir William Harcourt, who was at the time Home Secretary, addressed without difficulty over a thousand men of the Metropolitan Police, when presenting to constable Cole the Albert Medal, which had been conferred upon him by the Queen. This, it will be remembered, was in recognition of his courage in carrying away from the crypt the burning charge of dynamite which subsequently exploded in the historic hall a short distance only from the very spot where the ceremony was performed.

DONINGTON PARK, one of the stately houses of England, is to be sold shortly. Donington is famous as one of the most beautiful seats in the Midlands, with its magnificent park of great extent bounded by the Trent; the oaks are of gigantic size—one called Chaucer's Oak is said to measure over 40 ft. in girth at a height of 12 ft. The estate formerly belonged to the famous first Marquis of Hastings, and was the home of the celebrated Selina, Countess of Huntingdon.

OUT of a collection of pictures by old masters, from numerous private sources, disposed of at Christie's on Saturday, the most noteworthy lots were "A Rocky River Scene, with waterfall," by J. Ruysdael, 200 guineas, and "A Frozen River Scene, with tents and figures skating," on panel, by S. Ruysdael, 315 guineas.

IN view of the inrush of visitors to Scotland this year in connection with the Glasgow Exhibition, the Board of Manufactures have been considering the propriety of holding a loan exhibition of the works of deceased Scottish artists in the Royal Scottish Academy Galleries, The Mound, Edinburgh. The project has so far taken shape that the opening of the exhibition is announced for the first week of July, and it is proposed to continue it till the end of September. It is contemplated to group the pictures of each artist together, so that the visitor will be able to have an idea of what each of the artists did for Scottish painting. The artists who will be represented include:—Sam Bough, R.S.A.; G. Paul Chalmers, R.S.A.; Sir W. Fettes Douglas, R.S.A.; Thomas Duncan, R.S.A.; William Dyce, R.A.; Andrew Geddes, A.R.A.; Sir J. Watson Gordon, P.R.S.A.; Sir George Harvey, P.R.S.A.; Robert Scott Lauder, R.S.A.; J. Eckford Lauder, R.S.A.; John Philip, R.A.; John Pettie, R.A.; Sir Henry Raeburn, R.A.; William Simson, R.S.A.; Rev. John Thomson, H.R.S.A.; Sir D. Wilkie, R.A.; Alex. Fraser, R.S.A.; and J. C. Wintour, R.S.A.

Two sets of old—very old—Persian tiles are, says the *Daily Chronicle*, on view in a back street near the Haymarket, and on sale, too, for the matter of £36,000. Some mosque is the poorer by a noble panel, and by a tombstone of clay baked in the thirteenth century. Soft iridescent blues are the prevailing notes. Other notes are needed in a profusion which only the American millionaire seems likely to be able to produce. Our museums are, however, on the alert, and if £24,000 can keep the tiles in England, in England they are likely to have their abiding place.

THE annual meeting of the Council of the National Trust for Places of Historic Interest or Natural Beauty was held on Wednesday, under the presidency of the Marquis of Dufferin and Ava. In moving the adoption of the report, he said it referred to two matters of importance. One was the proposal, if possible, to constitute Stonehenge an area belonging to the public, and to place it under public supervision; and the other was the suggestion that the nation should acquire the Brandlehow Park Estate, Derwentwater, which was one of the most lovely spots to be found in the whole of Great Britain. The Rev. Canon Rawnsley moved: "That this meeting learns with satisfaction that the National Trust has the option of securing for the nation a part of the western shore of Derwentwater, and gives its warm support to the Council in the endeavour to raise the necessary purchase-money." He said of the £7,000 required £2,975 had been subscribed. Miss Octavia Hill seconded the motion, which was supported by Sir J. Hibbert, who suggested that a shilling subscription should be started amongst the working classes in the North of England to secure a national park on the banks of Derwentwater, and agreed to.

ACCORDING to an announcement advertised in some of the daily papers, the Master Builders' Association of Cape Town, South Africa, wish it to be known that there is a great demand for carpenters at 13s. per day; also masons, bricklayers, painters, and plumbers. If work be plentiful and constant, well and good, but it has to be borne in mind that the cost of living is far dearer, especially house rent, out there than at home. We should say that considerable caution should be exercised in responding to any general invitation such as this.

THE sanitary condition of Bishop Auckland, in the county of Durham, is apparently about as bad as it can be. A Local Government Board inspector, in reporting upon the frequent outbreaks of enteric fever that have occurred in the town and neighbourhood during the past few years, states that the water supply is obtained from the River Wear, which is grossly polluted, as it receives sewage from populous towns and villages within a few miles of the intake of the Auckland Waterworks, and from time to time the river water is supplied to the town unfiltered. With respect to the prevalence of fever for so many years, the inspector says the general sanitary condition of the town is so bad that it is difficult to fix upon any single unwholesome condition as playing a principal part in the spread of the disease, but he is inclined to think the chief source is a contaminated water supply.

THE annual conversazione of the Institution of Civil Engineers was held on the 19th and 20th inst. The president, Mr. James Mansergh, and Mrs. Mansergh received the visitors, who included, among many others, Lord Rosse, Sir Frederick Bramwell, Sir Benjamin Baker, Sir Douglas Fox, Sir William Preece, Sir William White, Sir E. Leader Williams, Sir Henry Oakley, Sir J. Wolfe-Barry, and Professor Unwin. A very interesting exhibition was displayed in the lecture theatre. Mr. F. W. Webb, the chief mechanical engineer of the London and North-Western Railways, showed models of his four-cylinder and three-cylinder express passenger engines Jubilee and Queen Empress, together with a model demonstrating the electric point and signal working now in use at Crewe. Mr. E. J. Hill showed the latest form of his railway coupling and also a device which enables the brake of a goods waggon to be manipulated with ease from either side. Among other interesting exhibits may be mentioned a series from Mr. Killingworth Hedges, honorary secretary of the Lightning Research Committee, which included a model indicating the arrangement of lightning conductors now being installed on Westminster Abbey, and also a conductor removed from the interior of the lantern of St. Paul's. In the main library there were various models of bridges, etc., while in another apartment Professor Sims Woodhead had an exhibition of bacteriological specimens bearing on water supply. Some pictures of the great Nile dam were shown by Sir Benjamin Baker.

A COMMITTEE has recently been appointed by the Institution of Civil Engineers, with the support of the Institutions of Mechanical Engineers and Naval Architects and of the Iron and Steel Institute, to consider the advisability of standardising the various kinds of iron and steel sections, and, if found advisable, then to consider and report as to the steps which should be taken to carry such standardisation into practice. The committee is composed as follows:—Mr. James Mansergh, Pres. Inst.C.E., Sir Benjamin Baker, K.C.M.G., Sir John Wolfe-Barry, K.C.B., Sir Frederick Bramwell, Sir Douglas Fox, Mr. G. Ainsworth, Mr. William Dean, Mr. A. Denny, Mr. J. Allen McDonald, Mr. E. Windsor Richards, Mr. James Riley, Professor W.

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C. Unwin, F.R.S., and Dr. J. H. T. Tudsbery (hon. secretary). Mr. Leslie S. Robertson, M.Inst.C.E., of 28 Victoria Street, S.W., has been appointed secretary to this committee, which has already commenced its work by taking evidence tendered by engineers, manufacturers, and contractors upon the subject of the inquiry.

THE Council of the Society of Arts have awarded the society's silver medal to the following readers of papers during the session of 1900-1901:—Major Ronald Ross, F.R.S., for his paper on "Malaria and Mosquitoes"; Dr. W. Schlich, C.I.E., F.R.S., for "The Outlook for the World's Timber Supply"; Lieutenant A. T. Dawson, late R.N., for "Modern Artillery"; Mr. F. B. Behr, for "The Proposed High-Speed Electrical 'Monorail' between Liverpool and Manchester"; Mr. P. R. Macquoid, for "Evolution of Form in English Silver Plate"; Professor Raphael Meldola, F.R.S., for "The Synthesis of Indigo"; Sir Joshua Fitch, for "School Work in Relation to Business"; Signor Marconi, for "Syntonic Wireless Telegraphy"; Mr. H. J. Tozer, for "The Growth and Trend of Indian Trade—a Forty Years' Survey;" Colonel Sir T. H. Holdich, C.B., for "The Greek Retreat from India"; Mr. J. D. Rees, C.I.E., for "Madras, the Southern Satrapy"; the Hon. Sir J. A. Cockburn, for "The Commonwealth of Australia"; Lieutenant Carlyon Bellairs, R.N., for "The Coal Problem—its Relations to the Empire"; Mr. William Burton, F.C.S., for "Recent Advances in Pottery Decoration"; and Mr. Hugh Stannus, F.R.I.B.A., for "Some Examples of Romanesque Architecture in North Italy."

OUR ILLUSTRATIONS.

ANCIENT MISERERE CARVINGS.

WE illustrate this week the exceedingly interesting series of ancient miserere carvings lent by Messrs. Harry Hems & Sons, of Exeter, to the Exhibition of Works in Wood, held at the beginning of the month under the auspices of the Worshipful Company of Carpenters. Eight of these were good specimens of very early 15th century work, originally in the Choir of the Collegiate Church of St. Michael at North Cadbury, near Castle Cary, in Somersetshire. They were removed from there some 60 years ago, at the same time, probably, as the old rood screen. Another of the series dates from early in the 13th century, and is one of the 50 (all still preserved) made at the instance of Bishop Bluere, who ruled the See of Exeter from April 1224 to 1244. During the renovation of Exeter Cathedral in the seventies the stalls were remodelled and made one less than before. Hence, whilst 49 of Bruere's misereres still do duty, this one was turned out, and has been preserved in the Chapter House ever since.

A COUNTRY CHURCH.

AUSTIN AND PALEY, ARCHITECTS.

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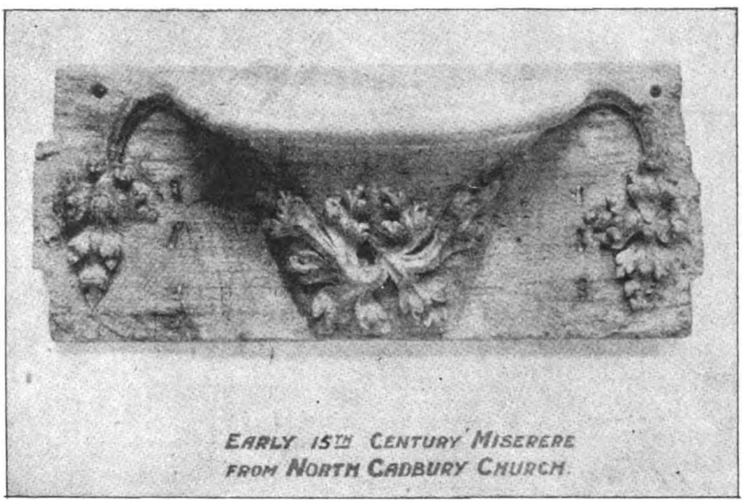

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FROM NORTH CADBURY CHURCH.

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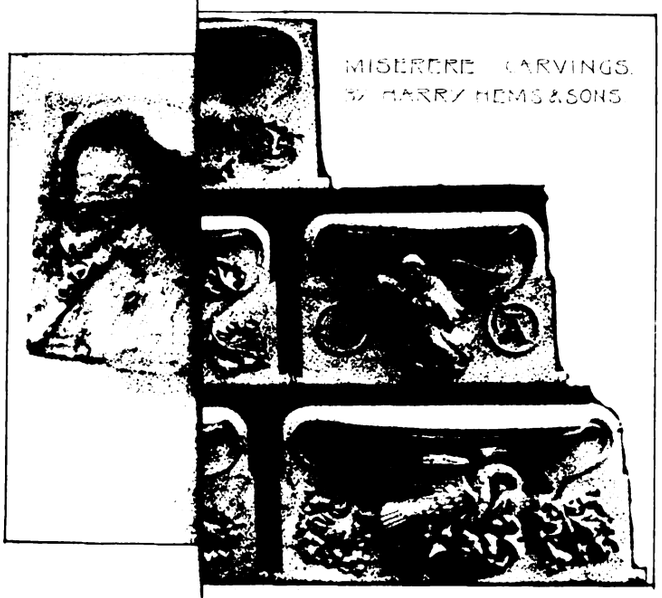
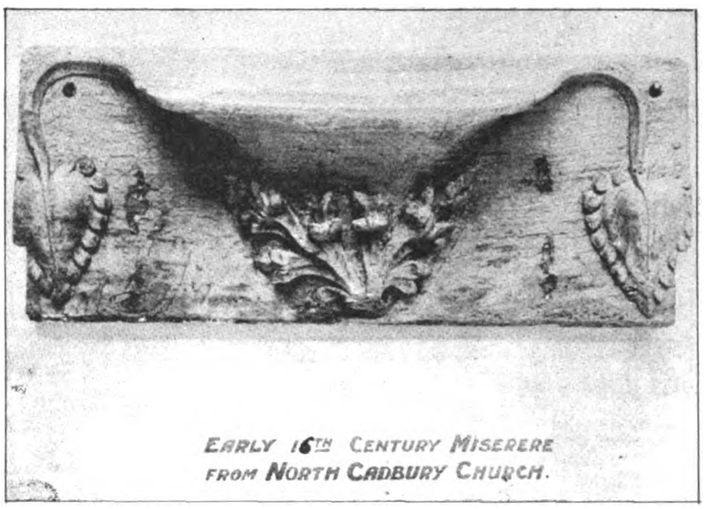
BY HARRY HEMS & SONS





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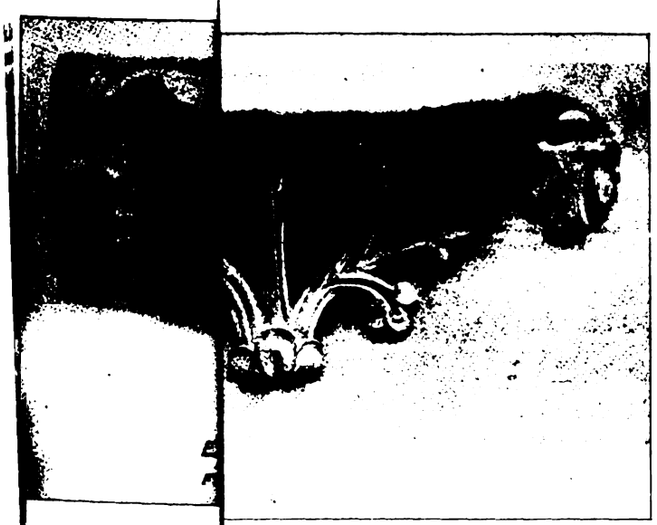

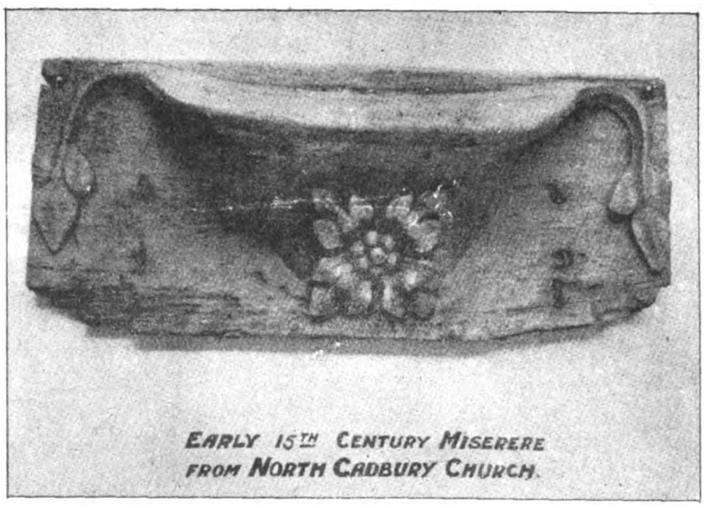

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C. Unwin, F.R.S., and Dr. J. H. T. Tudsbery (hon. secretary). Mr. Leslie S. Robertson, M.Inst.C.E., of 28 Victoria Street, S.W., has been appointed secretary to this committee, which has already commenced its work by taking evidence tendered by engineers, manufacturers, and contractors upon the subject of the inquiry.

THE Council of the Society of Arts have awarded the society's silver medal to the following readers of papers during the session of 1900-1901:—Major Ronald Ross, F.R.S., for his paper on "Malaria and Mosquitoes"; Dr. W. Schlich, C.I.E., F.R.S., for "The Outlook for the World's Timber Supply"; Lieutenant A. T. Dawson, late R.N., for "Modern Artillery"; Mr. F. B. Behr, for "The Proposed High-Speed Electrical 'Monorail' between Liverpool and Manchester"; Mr. P. R. Macquoid, for "Evolution of Form in English Silver Plate"; Professor Raphael Meldola, F.R.S., for "The Synthesis of Indigo"; Sir Joshua Fitch, for "School Work in Relation to Business"; Signor Marconi, for "Syntonic Wireless Telegraphy"; Mr. H. J. Tozer, for "The Growth and Trend of Indian Trade—a Forty Years' Survey;" Colonel Sir T. H. Holdich, C.B., for "The Greek Retreat from India"; Mr. J. D. Rees, C.I.E., for "Madras, the Southern Satrapy"; the Hon. Sir J. A. Cockburn, for "The Commonwealth of Australia"; Lieutenant Carlyon Bellairs, R.N., for "The Coal Problem—its Relations to the Empire"; Mr. William Burton, F.C.S., for "Recent Advances in Pottery Decoration"; and Mr. Hugh Stannus, F.R.I.B.A., for "Some Examples of Romanesque Architecture in North Italy."

OUR ILLUSTRATIONS.

ANCIENT MISERERE CARVINGS.

WE illustrate this week the exceedingly interesting series of ancient miserere carvings lent by Messrs. Harry Hems & Sons, of Exeter, to the Exhibition of Works in Wood, held at the beginning of the month under the auspices of the Worshipful Company of Carpenters. Eight of these were good specimens of very early 15th century work, originally in the Choir of the Collegiate Church of St. Michael at North Cadbury, near Castle Cary, in Somersetshire. They were removed from there some 60 years ago, at the same time, probably, as the old rood screen. Another of the series dates from early in the 13th century, and is one of the 50 (all still preserved) made at the instance of Bishop Bluere, who ruled the See of Exeter from April 1224 to 1244. During the renovation of Exeter Cathedral in the seventies the stalls were remodelled and made one less than before. Hence, whilst 49 of Bruere's misereres still do duty, this one was turned out, and has been preserved in the Chapter House ever since.

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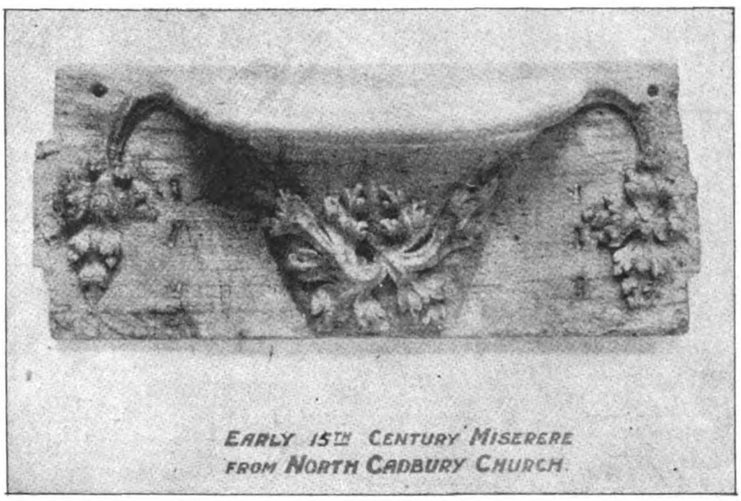

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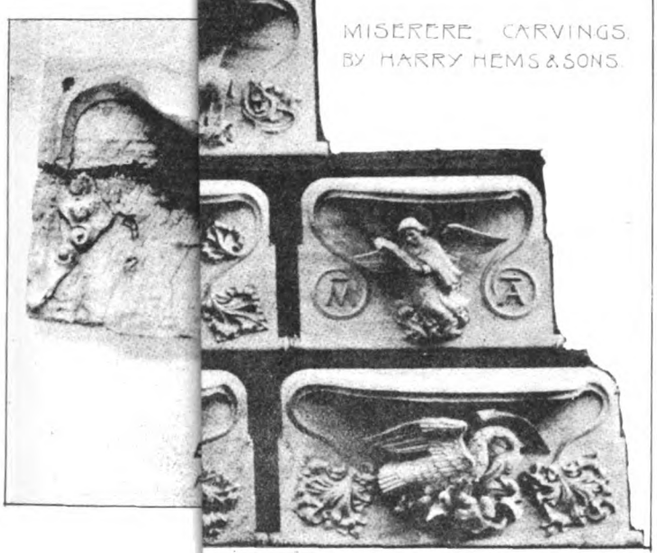

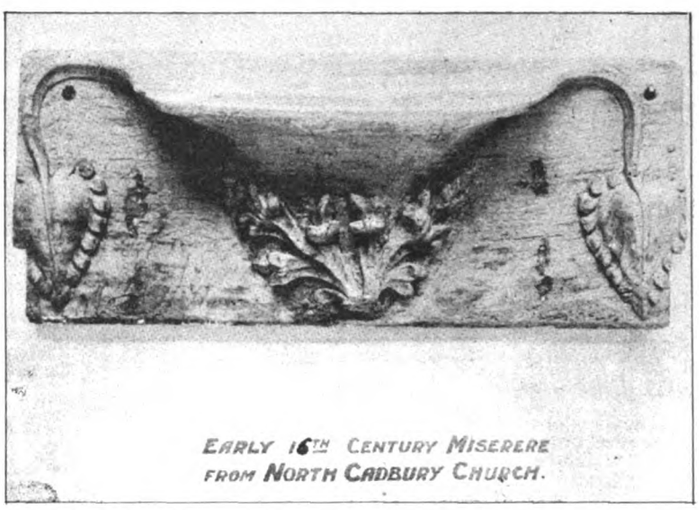

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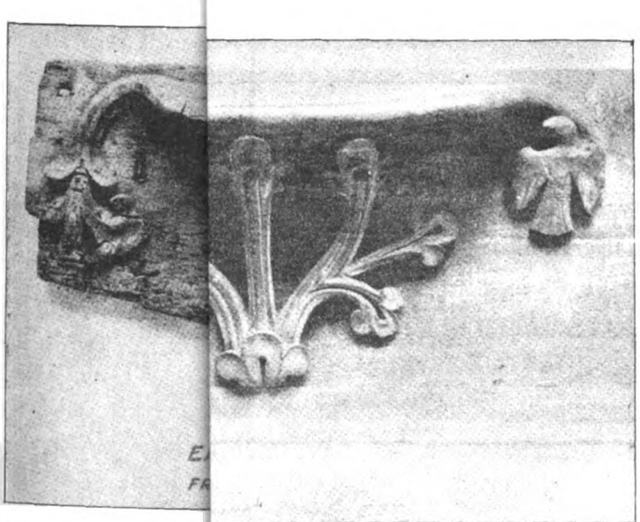

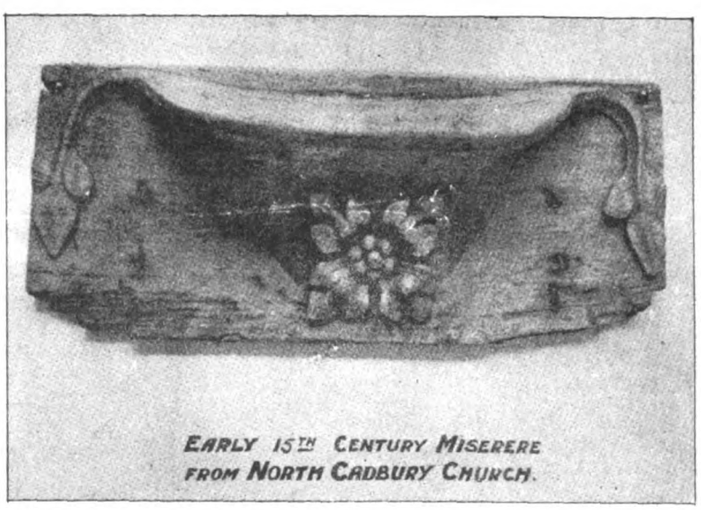

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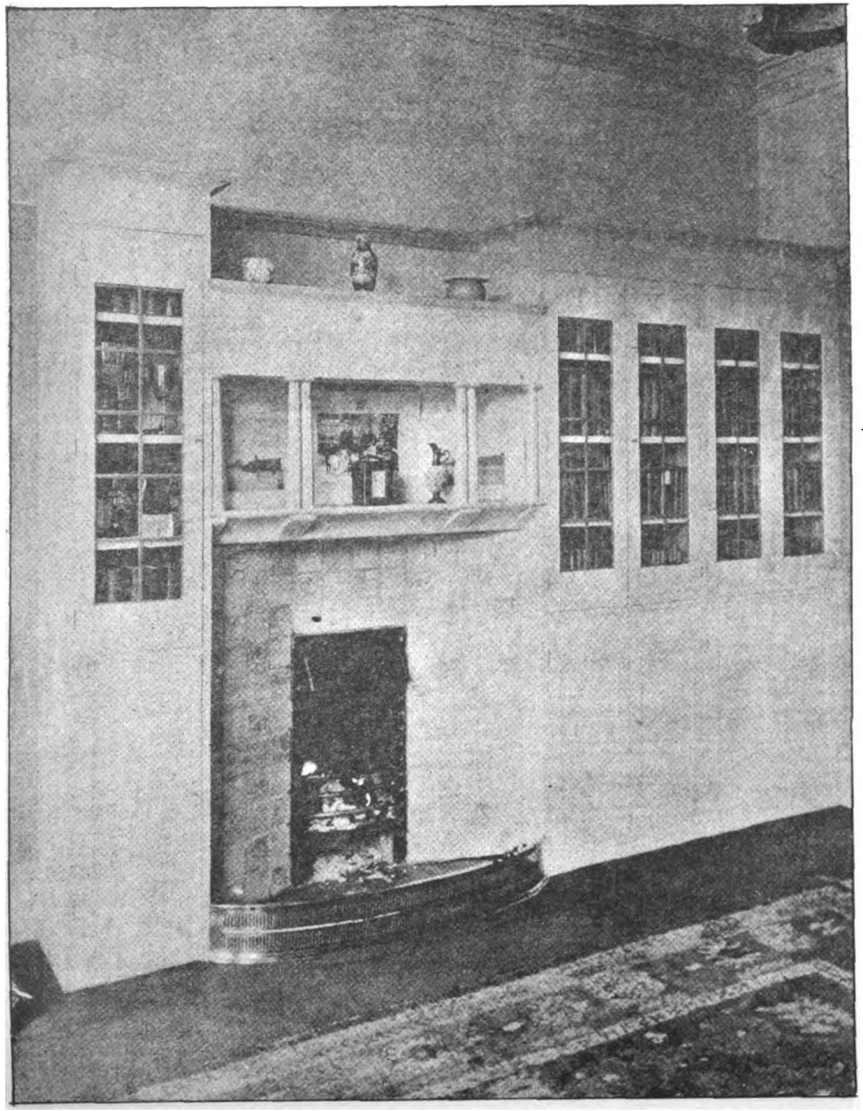

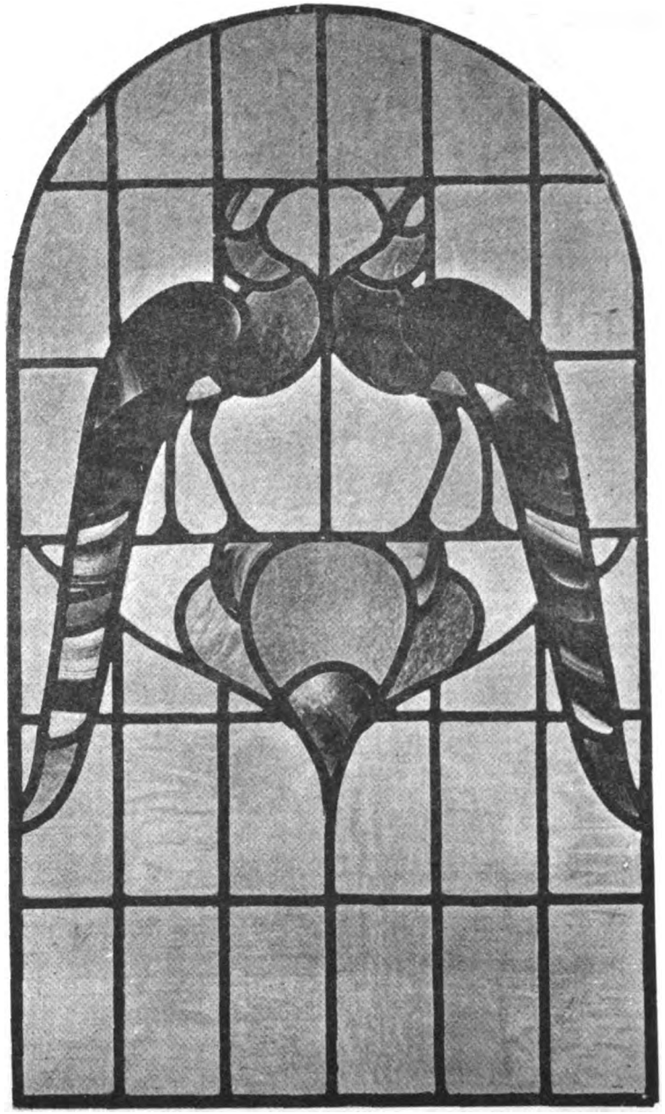

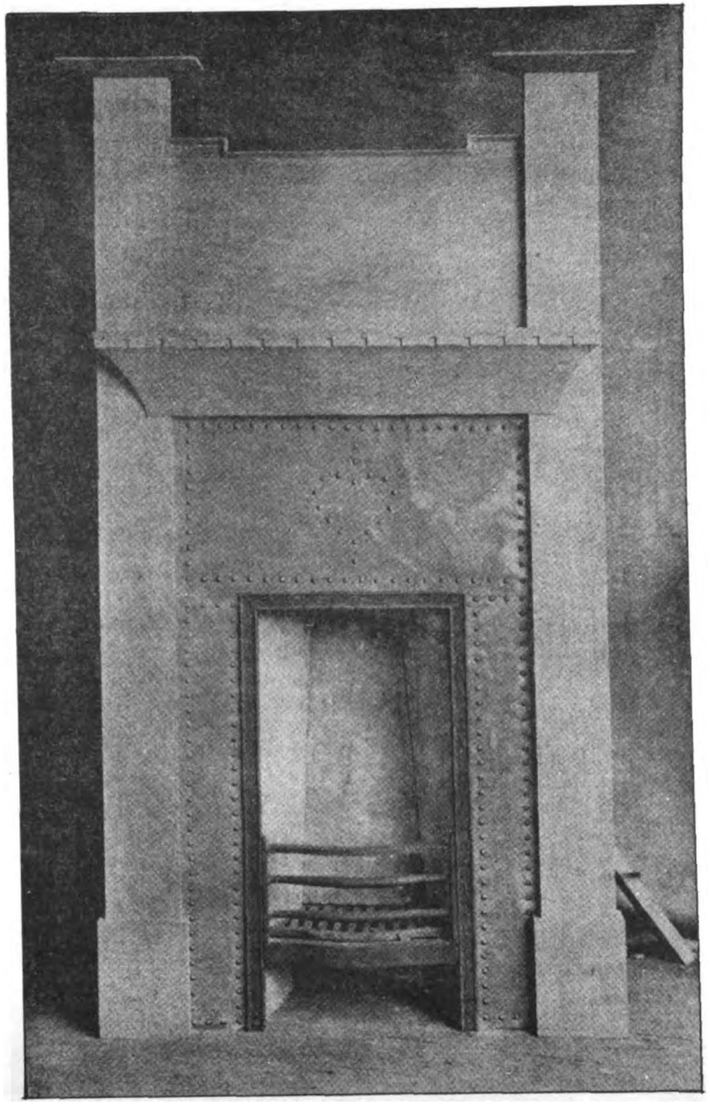

DECORATIVE WORK
By NEATBY EVANS & Co

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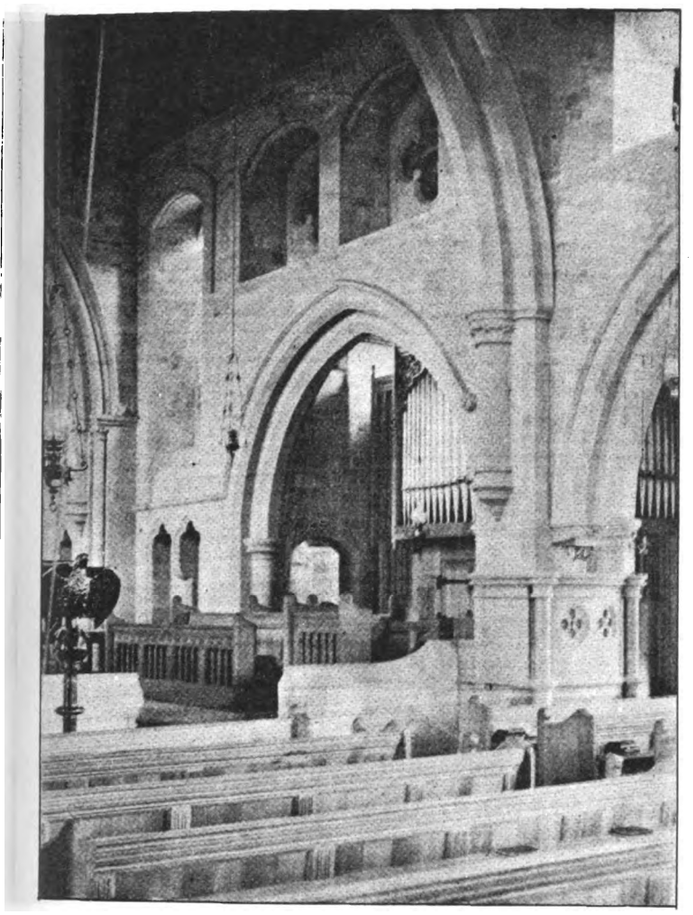

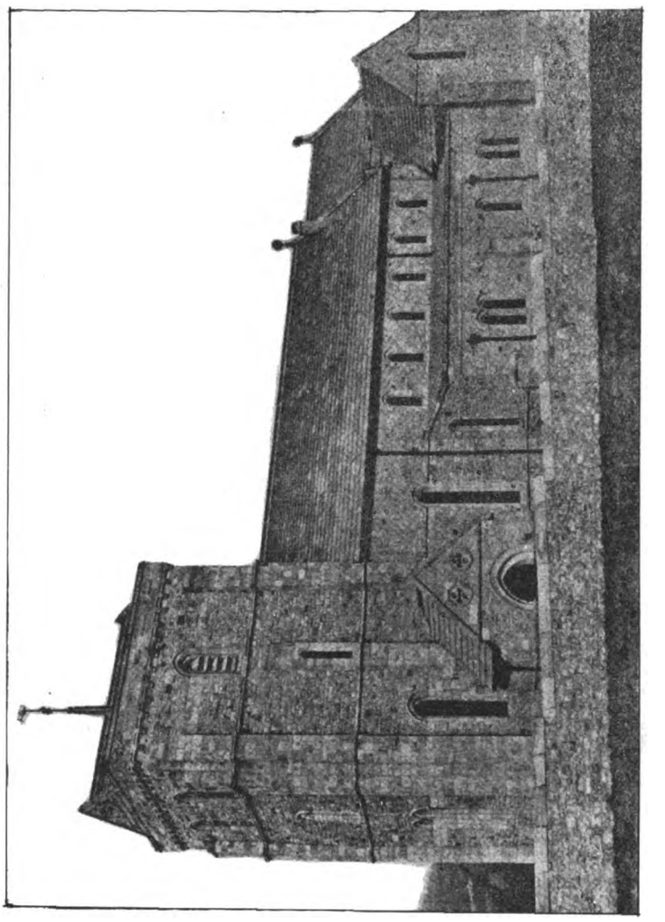

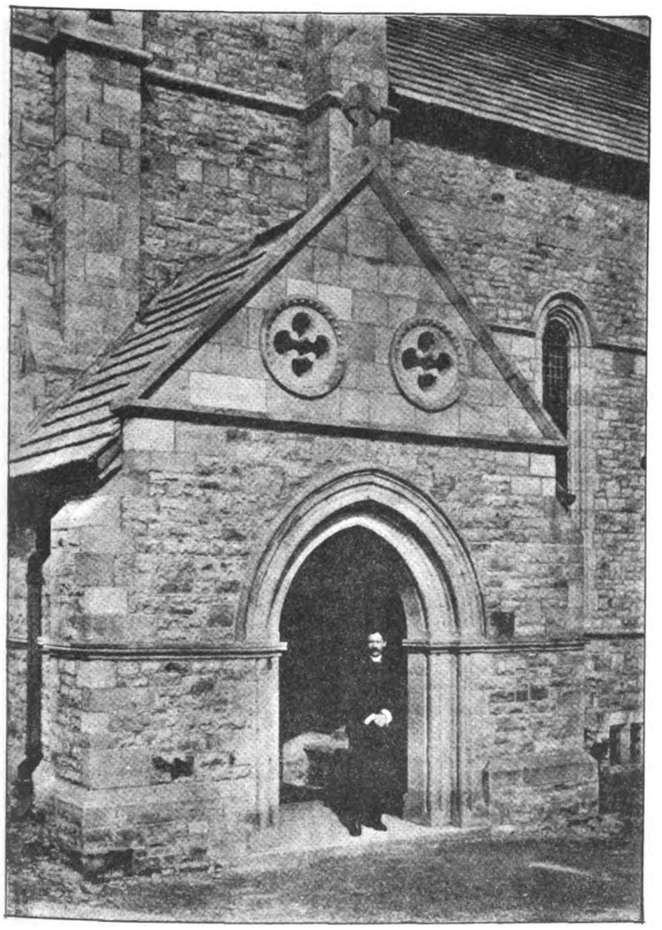

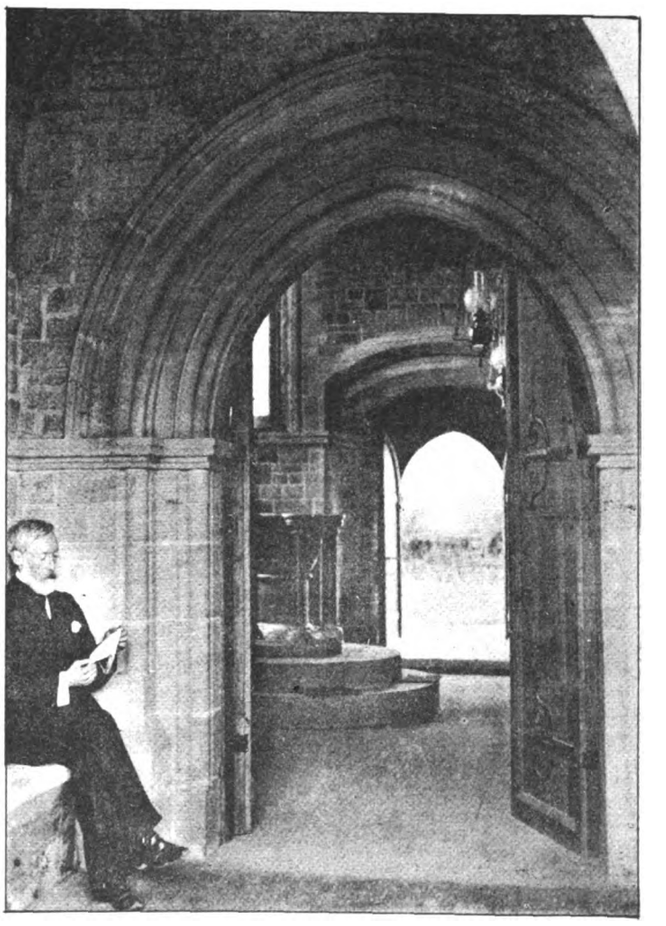

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feature of recent exhibitions; nor are there any models placed about the room.

In the designs for large buildings there are obvious signs of the reaction in favour of classical or Palladian architecture, and of the reviving admiration for Sir Christopher Wren, which is now being so generally experienced. Not for a long time to come will the unfortunate and unpractical experiment of the New Law Courts be repeated in London; everybody has come round to the opinion that Somerset House is at once a nobler and more useful type. Some of us will live to see an adaptation of this type in the new War Office, and in the buildings in Parliament Street; perhaps also, if the gods are favourable, and if some comprehensive scheme is insisted upon by the County Council, we may see buildings akin to these arise on the ground about to be left vacant to the north of the Strand. Two of the architects whose work we noticed when the "suggested designs" were shown at the Water Colour Society's rooms have again sent samples of what they would do. Messrs. Ernest Runtz show us what the Gaiety Theatre and the *Morning Post* offices will be like; and Mr. Flockhart, a clever architect with too great a fancy for strong projections, submits a design for a block of public buildings on this site (1,561). Mr. E. W. Mountford, whose services seem to be in great demand just now, shows us the new Museum for the Corporation of Liverpool, the new Sessions House for the Corporation of London, and other designs; these are solid, correct, and perhaps a little heavy. One of the finest pieces of draughtsmanship here is the drawing signed "C. W. E. *delineavit*," of the Glasgow Municipal Buildings, of which the architect is Mr. Clyde Young (1,638); this is dignified and effective, while on the other hand, some large buildings, which more or less belong to the same style, have no attractiveness at all; witness that of Salisbury House, Finsbury Circus (1,569), which seems to us to be in many ways unfortunate.

Mr. T. G. Jackson, to whom both our Universities owe so much, sends his drawing for the new buildings at Cambridge (1,568), while Mr. G. F. Bodley, whom it is pleasant to welcome back to these walls, displays four interesting examples of ecclesiastical work—work in which he has had few rivals since Mr. Pearson died. To the class of smaller public buildings belongs such a drawing as that of Mr. M. B. Adams for the new School of Economics given by Mr. Passmore Edwards to the University of London (1,535). This appears to be a practical and irreproachable building in a modified Queen Anne style. Mr. Gerald Horsley ought to make a very interesting thing of his "St. Paul's School for Girls, Hammersmith" (1,550).

Other architects who in different ways, public or domestic, establish a claim to notice are Mr. R. G. Kirkby (Municipal Buildings, South Shields, 1,665); Messrs. Bateman & Bateman (House at Barnet Green, Worcestershire, 1,640); Mr. Halsey Ricardo (A Railway Station in India, 1,588); Mr. T. W. Cutler (Staircase and Chapel, Italian Hospital, 1,532); Mr. L. Stokes (Schools at Oxford, etc., 1,527); Mr. Paul Waterhouse (Designs for Shops, 1,687); and Mr. Arnold Mitchell (Additions to Tissington Hall, 1,630). A really beautiful drawing, almost too elaborate for practical realisation, is Mr. A. Koch's design for Government Offices, Zurich (1,536); in studying it we are once more obliged to confess that in the higher qualities of architectural draughtsmanship foreign architects frequently surpass us.

MR. LEWIS F. DAY ON THE "NEW ART" AT SOUTH KENSINGTON.

SOME drastic criticism has been meted out by Mr. Lewis F. Day to the collection of "new art" furniture now to be seen in what was lately the Tapestry Court at South Kensington. Mr. Day's article on the subject appears in the *Manchester Guardian* on the 27th inst., and from it we quote the following trenchant remarks:—

"We have heard during the last few years too much about the 'new art.' It has long been the catchword of enterprising tradesmen. Is it now seriously to be accepted by the wardens of artistic education? Do they know no better than to confound originality with novelty? Are they not aware that what is good in this 'new art' is not new, and that what is new is not good? Grant that there may be promise in its unrest, the very readiness of the new generation to go with it argues natural sympathy between the two and the needlessness, therefore, of encouraging the restive to kick over the traces. Those of them who may have been held in till now by a doubt as to the wisdom of breaking loose from any restraint which the influence of the museum was calculated to impose upon youthful recklessness will doubt no longer. Have they not now authority for giving reins to the wildest that is in them? And it seems the project is presently to circulate this unfortunate collection and send it round in succession to various manufacturing towns. Alas, that the Circulation Department should lend itself to such service, to the greatest demoralisation of the greatest number!

"The cause of the quarrel with this 'new art' is not that it is new, but that it is not sober or sane enough to be endorsed by the educational authorities. Who would wish to sleep in such a bed, to face such a settle, to sit in such chairs as are assembled in what was the Tapestry Room at South Kensington? Who would care to contemplate such a tapestry as is there shown? . . . Indeed this 'new art' of the French and others is but a foreign version of our own English extravagance carried to yet further excess. It is the delirious art of men raving to do something new, oblivious in their rage alike of use and beauty. It is precisely the last thing it was desirable to set before the student, calculated as it is to counteract the good effect of the museum upon his taste. Whatever the munificence of the donor, it ought never to have been accepted and ought not to be sent on circulation."

LONDON COUNTY COUNCIL NOTES.

PROPOSED NEW TRAMWAYS.

THE most important subject dealt with by the London County Council on Tuesday was the report of the Highways Committee dealing with the proposals in regard to new tramways. The report recommended large extensions in the existing tramways within the county of London and the construction of new lines. The total estimated gross outlay involved by the proposals, including the necessary widening of streets which are to be carried out by the Improvements Committee, is £2,026,800, and the recoupment by sale of surplus lands is estimated at £97,400. These figures, however, do not include street-widenings in connection with the projected line from the Marble Arch to Cricklewood, which the Improvements Committee have not yet considered, nor the improvement at the corner of Euston Road and Hampstead Road, which the St. Pancras Borough Council require should be undertaken before they will consent to the tramway along Tottenham Court Road; neither do the figures include anything in respect of the generating station for the supply of electrical energy. The net cost of the improvements beyond the proportion to be borne by the tramways account is estimated at £606,093, towards which the local authorities are to contribute £301,407, leaving £304,686 to be borne by the Council. This would mean a charge for interest and repayment in the first year after completion of £15,066, calculated in the net cost equivalent to a rate of about ·091 of a penny in the pound on the present assessable value.

After discussion the committee's recommendations were adopted.

CONDITIONS OF CONTRACTS.

A discussion took place on a recommendation of the General Purposes Committee to omit from the standing orders the clause relating to variations in the rates of wages and hours of labour during the continuance of a contract. The committee reported that, if the clause was retained, contractors would endeavour to cover their liability by considerably increasing the amount of their tenders, and that the increase would fall upon the Council.

Several of the Labour members protested in the interests of the workmen against the omission of the clause.

An amendment to refer the recommendation back was moved, and, after a lengthy discussion, was carried, and the recommendation referred back.

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THE HOUSING QUESTION.

The Housing of the Working Classes Committee recommended that the construction of two blocks of artisans' dwellings in the Churchway area, St. Pancras, should be entrusted to the Works Department at an estimated cost of £22,567.

An amendment was moved and seconded to the effect that tenders should be invited for the work.

Mr. Waterlow (chairman of the Housing Committee), however, defended the action of the committee, pointing out that a great deal of excess cost on workmen's buildings carried out by the Works Department accrued some years ago during the time that department was in a state of disorganisation. He thought it was fair, in present circumstances, that they should send some work to contractors and some to the department; but they had to look carefully at the probable nature of the work. In this particular instance, after full consideration, they thought the work should go to the department.

The amendment was eventually rejected, and the recommendation of the committee adopted.

ENLARGEMENT OF WHITKIRK CHURCH.

THE enlargement and improvement of the old church at Whitkirk, which has been in progress for ten months, has now been completed, after an expenditure of about £3,000. The exact date of the erection of the church is lost in antiquity, but records prove that the structure was standing in the middle of the fifteenth century. The building, which is of the perpendicular Gothic style, was restored in 1855-56, and the interior modernised. Since the advent of the present vicar (the Rev. G. Sharp, M.A.) it has been decided that the east end of the church should be entirely renewed, and the east wall having been taken down, has been rebuilt about 13 ft. further east. The "Ward Memorial" window has been replaced by a smaller, but very beautiful five-light stained window, and a sanctuary arch has been built upon the site of the old east wall. The entire chancel has been painted in red and gold, and a new altar, with new furniture and hangings, has been erected. Considerable improvement has been effected in the Templenewsam Chantry, belonging to the Hon. Mrs. Meynell Ingram, and the windows in it, as well as the window in the west aisle, have been filled with stained glass. A new vestry has also been provided. Mr. G. F. Bodley, A.R.A., of London, was the architect responsible for the alterations, and the stained windows are also from his design, having been carried out by Messrs. Powell, of London. The contractors for the work were Messrs. Stephens & Bastow, of Bristol.

NEW SWIMMING BATH FOR HOLBORN.

THE new swimming bath in Broad Street, Holborn, the foundation stone of which is laid to-day, is an extension of the public baths and washhouses erected in Endell Street by the Commissioners for Public Baths and Washhouses for the parishes of St. Giles'-in-the-Fields and St. George, Bloomsbury, in the year 1852. The extension which is now in hand has been designed by Messrs. John & S. Flint Clarkson, of Ormond Chambers, Great Ormond Street, their design having been selected in limited competition. The building contract is being carried out by Messrs. F. Gough & Co., of Henden. It is anticipated that the total cost of the land and baths will amount to the sum of £25,000.

The extension, which will have a frontage in Broad Street of 55 ft., and a depth from north to south of 130 ft., will provide a swimming bath 90 ft. in length, with closed dressing-boxes entered from the platforms. The bath will be paved with mosaic, the walls faced with glazed bricks, and domed ceilings of fibrous plaster will be formed above the lantern lights; a gallery will run round all four sides of the bath. There will also be subways all round. The bath hall will be entered through a vestibule, etc., from Broad Street.

The height of the bath hall will be about 40 ft. from the bottom of the bath to the domes. The elevation towards Broad Street will be four storeys in height, of Portland stone, red Bracknell bricks being used for the upper floors. The elevation will resemble the existing front in Endell Street, the resemblance intentionally made so strong that it will be clear that the two frontages are parts of one building. There will also be provided rooms for clubs, and a general supplementing of the existing accommodation.

All the floors will be constructed of fire-resisting material. The water in the swimming bath will be heated by steam. Arrangements will also be made for the steam-heating of the atmosphere, so as to counteract condensation, and to enable the bath to be kept in use in chilly weather. The building will be lighted by electricity.

GLASGOW'S WATER SUPPLY.

THE new aqueduct for the supply of water from Loch Katrine to Glasgow, which has taken 15 years to construct, was formally opened on the 20th ult. The new tunnel practically doubles the flow of water into Glasgow.

The original undertaking was constructed under an Act of Parliament passed in 1855, and was opened by Queen Victoria in October, 1859. The first aqueduct and mains cost £1,268,663, and the extensions in the city £246,907, making in all £1,515,570. In 1885 it was necessary to increase the supply, and another Act was then obtained authorising the Corporation (1) to raise Loch Katrine another 5 ft., making 12 ft. in all that might be drawn upon for the supply of the city; (2) to take a further 60,000,000 gallons per day for the supply of the city and suburbs; (3) to construct a duplicate line of aqueduct and service reservoir with lines of pipes to the city; and (4) to raise Loch Arklet 25 ft. above its present level and lead the water from this loch into Loch Katrine by a tunnel.

The first aqueduct from Loch Katrine to the service reservoir at Milngavie is 25¾ miles in length; it is 8 ft. wide by 8 ft. high with arched roof, and capable of discharging 40,000,000 gallons per day. The second aqueduct, which runs almost parallel with the first all the way from the loch to the service reservoirs, is 23⅛ miles in length; it is 12 ft. wide by 9 ft. high, with arched roof where not lined with concrete, and 10 ft. wide by 9 ft. high with arched roof where lined with concrete, and is capable of discharging 70,000,000 gallons per day.

The two aqueducts, taken together, are capable of discharging 110,000,000 gallons per day into the two service reservoirs, which are distant about seven miles from the city. This quantity of water would fill a canal 30 ft. wide and 6 feet deep for 19 miles.

The construction of the new aqueduct has taken from March 1886 to June 1901 to complete, or 15 years. The Mugdock reservoir has a water surface of 62 acres, and a capacity of 500,000,000 gallons; and the Craigmaddie reservoir has a water surface of 88 acres, and a capacity of 700,000,000 gallons. Combined, these reservoirs contain 24 days' supply at the rate of 50,000,000 gallons per day. There are four lines of 36-inch pipes from Mugdock reservoir, and two lines of 36-inch pipes from Craigmaddie reservoir.

The water from Loch Katrine undergoes no filtration, being merely strained through fine wire gauze netting to prevent sticks, leaves, etc., passing into the pipes. In order that the water might be kept free from pollution the feuing rights over the whole drainage area of Loch Katrine and Loch Arklet, extending to 26,295 acres were, in 1892, purchased by the corporation at a cost of £17,000, and the owners of the lands within that area were prohibited from erecting any houses or buildings on any part of those lands.

The cost of the new works is as follows:—Reservoir, £316,600; aqueduct, £730,640; outlet works and raising loch, £40,731; lands and compensation, £93,727; engineering, £31,582—total, £1,213,280. The new mains from Craigmaddie cost £116,126.

THE theatre of Totis Castle, where Handel and Mozar both began their careers, is, according to *Dalriel*, to be converted into a chapel on the orders of Prince Nicholas Esterhazy.

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NEW WORKS FOR THE SOUTHWARK AND VAUXHALL WATER COMPANY.

THE new works for the Southwark and Vauxhall Water Company at Walton include a new pumping station, new filter beds, and storage reservoirs. The pumping station is the finest installation of the kind in the country, and probably in the world. It excited the envy and admiration of all the water engineers present. It consists of three triple-expansion engines of 780 horse-power each, built by the North-Eastern Marine Engineering Company, of Sunderland. The boiler-house contains ten Babcock & Wilcox water-tube boilers (land type). The engine-house is lighted by electric arc lamps, the power for which is supplied by one of the patent double triple-expansion engines invented by Mr. Restler, the engineer to the company. The six new filter beds have only just been completed, and were charged yesterday for the first time in the presence of the visitors, who watched the process of admitting the river water. The filtering layer is 3 ft. 6 in. in depth, of which 2 ft. 6 in. is sand. Seven additional filter beds are under construction in the same area. A new instrument for measuring and recording the rate of filtration on the principle of the waste water meter is on trial at the waterworks. After inspecting the filters the party proceeded to the large storage reservoirs, which hold 300 million gallons, and were built in 1899. They form two sheets of water nearly half a mile in length. Before their completion the storage capacity of the company was only 90 million gallons. It is now intended to increase it to 1,512 million gallons by means of a new large reservoir, to be built by Messrs. John Aird & Son, and to hold 1,076 million gallons.

A TALL BRICK CHIMNEY IN THE STATES.

A BRICK chimney, 360 ft. high, is now being built at the works of the Orford Copper Company, near New York, in order to discharge the fumes and gases at such a height that they will not be a nuisance to the neighbourhood. It has but a single shell, and for 30 ft. above the foundation it is square, the flues entering this portion. Above this it is circular, with an interior diameter of 20 ft. at the base and 10 ft. at the top.

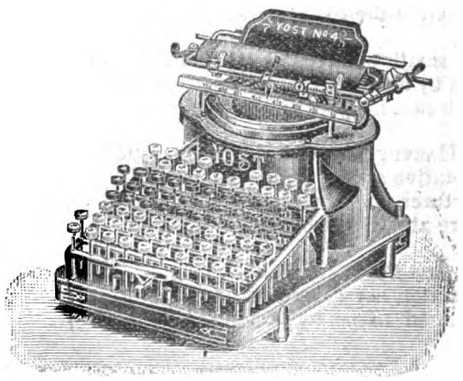
The foundation consists of 360 piles, 24 in. between centres, driven 15 ft. into a bed of solid gravel, and capped by a block of concrete, 41 ft. square and 13 ft. high. The shaft is of moulded red bricks, having radial ends, and curved interior and exterior faces, with vertical perforations through the body of the bricks. They are 4 in. thick, and vary in length from 12 in. at the base to 11 in. at the top. The large size decreases the number of bricks and joists, while the radial form makes the joints narrow. Mortar entering the holes tends to bond the bricks together, while the hollow spaces prevent too rapid heating and cooling of the shell, thus enabling a single-shell chimney to be safely built. The thickness of the circular shell is about 46 in. at the base and 11 in. at the top. The outside face has a batter of 1 in 43, while the inside has 2 in. offsets, 16 ft. 6 in. apart.

The chimney is strengthened by wrought iron bands, 5-16th in. thick and 3½ in. wide, 8 ft. apart. It weighs 3,475 tons, or 5·57 tons per square foot of foundation. A firebrick lining is built for 42 ft. above the flues, as the gases enter at a temperature of 1,500 degrees Fahr., brick partitions being built to equalise the flow and prevent conflicting currents.

TYPEWRITING.

THERE is no longer any question as to the utility of the typewriter. It is an acknowledged boon to business men of all classes and of every degree. There are many makes of typewriters now on the market, each claiming distinct advantages, but the older machines seem to hold their own and to obtain the bulk of the business, and amongst these the one which seems to give unqualified satisfaction is the Yost.

The Yost has many mechanical points peculiarly its own which are of the greatest moment to the typewriter purchaser. Foremost among these points is the ink pad, from which the ink supply of the Yost is derived, doing away with the old-fashioned ink ribbon, and allowing the steel type to strike direct on the paper, thereby ensuring a perfectly sharp and clear imprint. Moreover, the Yost pad will outlast many ribbons. Then there is the centre



guide through which each type passes to the printing point. Without this arrangement, the Yost type would print with the utmost regularity, so well are the type aligned, but the centre guide steadies the type as it reaches the printing point, and enables it to produce a perfectly clear firm impression. The key-board, so far as the arrangement of the order of the letters is concerned, is the one in general use, but it differs from many other typewriters, inasmuch as a set of keys, exactly similar to the small letters, is provided for the capitals. There is, therefore, no depressing of a shift-key to throw the carriage into another plane in order to print capital letters, there being a separate and distinct key for every character. This is a great desideratum, as it both effects a saving of time, and ensures perfect alignment of capitals in combination with small letters. The simplicity of the Yost machine makes it readily adaptable to different languages. The Yost can be fitted with Hebrew, Arabic, Hindustani, and other characters.

Both in commercial and in private life the Yost typewriter is a great favourite, and it has been supplied, we believe, to most, if not all, the crowned heads of Europe, but among the most recent to purchase the Yost, are the King of Spain, King of Roumania, the Crown Prince of Greece, and the ex-Queen Isabella II. of Spain. We should also mention that many large orders have been placed by the Indian Government for Yosts, and the last, for 156 machines, constituted we are informed, the world's record order for typewriters for immediate delivery. This is a real and practical proof of the great merit of the Yost typewriter. It may, however, be mentioned that the Yost has been awarded 22 gold medals during nine years, the latest award being at the Paris Exhibition of 1900.

TRADE NOTES.

THE London Fireproof Plate Wall Company, Limited, 60, Watling Street, E.C., have recently completed some walls at the General Post Office in London, the largest is L shape, and the total length about 85 ft., the height to the crown is about 28 ft. and the whole of the wall is suspended to the semi-circular girder forming the roof.

THE ventilation of the new electricity station presently being erected by the Corporation of Manchester, is being carried out by means of Mackay's patent direct-acting ventilators, manufactured by the sole makers, Messrs. Cousland & Mackay, ventilating engineers, Glasgow and Manchester.

A LARGE clock, with two illuminated dials, with Cambridge chimes, has just been fixed at Tibshelf Church, Derbyshire. It is fitted with all the latest improvements, and generally to the design of Lord Grimthorpe. Messrs. John Smith & Sons, Midland Clock Works, Derby, have carried out the work.

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JOTTINGS.

AN old Roman camp—Winklebury, near Basingstoke—is to be sold by auction on July 18th.

MR. FRANK SMITH has given notice of motion that the London County Council should pay no wage lower than 30s. a week to their labourers.

EIGHTY small cottages in Wilford Road, Croydon, are occupied by no fewer than 784 persons, and it is stated that the death-rate is 43·54 per 1,000.

MR. W. HARVEY STRINGER has been appointed the London representative of Mr. James Gibbons, the well-known lock manufacturer and builders' brassfounder, whose showrooms are at 9, Southampton Row, W.C.

MR. ALFRED DIXON, of Bristol, bought a landscape picture at an auction several years ago for 35s. The picture is now declared to be by Richard Wilson, R.A., and worth £2,000.

THE secretary of the Alexandra Palace has invoked the aid of London borough councils in an effort to obtain £15,000 for the purpose of securing an important addition to Alexandra Park, also to complete the renovation of the grounds and to stock the greenhouses.

A NEW town hall has just been opened at Dukinfield, Lancashire. It has cost nearly £15,000, and was designed by Messrs. John Eaton, Sons & Cautrell, of Ashton-under-Lyne. Mr. Haque acted as clerk of the works. The whole of the exterior is built of Accrington bricks, with Yorkshire stone dressings.

MR. FREDERICK LILLJEKVIST, architect to the King of Sweden and Attaché to the Swedish Office of Works, who has been entrusted with the arrangement and design of the new Royal Theatre at Stockholm, visited London the other day to consult with Mr. Edwin O. Sachs and inspect the new stage arrangements at the Covent Garden Opera House, Mr. Sachs having been asked to report on the proposed scheme.

MR. H. P. BOULNOIS, M.I.C.E., conducted a Local Government Board enquiry at Edmonton on the 18th inst. for the purpose of hearing an application by the District Council for sanction to borrow £30,000 for the erection of public baths, a council chamber and public offices, and a mortuary and post-mortem room. It was stated that the population in 1891 was 25,380, but now it was 46,899. There was no opposition.

THE design submitted in a limited competition for proposed new Presbyterian Church, Muswell Hill, N., under the motto "New Era," has been adopted, and the authors of the design, Messrs. George Baines, F.R.I.B.A., and Reginald Palmer Baines, 5, Clement's Inn, Strand, W.C., have been instructed to proceed with working drawings. The new church is to accommodate about 1,000 worshippers and will cost over £7,000.

FROM the memorandum prepared by the Labour Department of the Board of Trade for the *Labour Gazette* we learn that in some branches of the building trades employment has continued to improve slightly, but is not so good as a year ago. The percentage of unemployed union members among carpenters and plumbers at the end of May was 3·1, compared with 3·4 per cent. in April. The percentage for May, 1900, was 1·9.

A PUBLIC meeting was held at Dover the other day in connection with the local memorial to Queen Victoria and a memorial to Sir Richard Dickeson, who was for four years mayor of Dover. It was decided that both memorials should take the shape of additions to Dover Hospital, that to the Queen to consist of an isolation block and new out-patients' department at a cost of £6,000, and the Dickeson memorial to consist of an operating theatre and lift to cost £1,400.

THE Bishop of Llandaff on the 13th inst. reopened the old parish church of Merthyr Tydfil, which has been restored at a cost of £7,000. The tower was partially pulled down and rebuilt in order to receive a peal of bells, the gift of Sir W. T. Lewis and seven other inhabitants, and he was also the donor of a large stained-glass window erected to the memory of 36 "captains of industry" who had been associated with him in the development of the mineral industry of the district.

THE Technical Education Board of the London County Council is making arrangements at the Poplar Technical Institute for giving practical instruction in the use of nautical instruments and in marine engineering. A building is being planned which will afford accommodation for marine engineering, naval architecture and navigation, building construction, joiners' work, and plumbing and metal-plate work, with a lecture theatre and class-rooms.

A NEW pavilion has been presented to the Winnington Park Recreation Club, Winnington, near Northwich, by Sir John T. Brunner, M.P., and Dr. Ludwig Mond. The new pavilion, which has been built at a cost of £10,000 is designed primarily as a memorial of the completion in 1897, by the firm, of 25 years' connection with the district. The building covers an area of 12,000 feet, and in design is an adaptation of the half-timbered style of architecture. Besides the pavilion proper, there are a spectators' stand, verandahs, and balcony facing the cricket ground and cycling track, and the building also includes a billiard-room with three tables, a reading-room and library, refreshment, dressing, and bath rooms, and a concert hall which will accommodate 600 people.

IN the Chancery Division on the 25th inst., Mr. Justice Cozens-Hardy had before him the action of Welborn *v.* Harrogate Central Arcade Company, by which the plaintiff asked for an injunction to restrain the defendants from erecting on the defendant's premises on the west side of Back Beulah Street, Harrogate, any building which would darken, injure, or obstruct any of the ancient lights or windows of the plaintiff's premises. The plaintiff had received an offer from the defendants not to build higher than 14 ft. 6 in., and under those circumstances the question resolved itself into one of costs. Mr. Justice Cozens-Hardy granted an injunction in the terms of the letter referred to, and gave the plaintiff costs of the action except those of bringing up the witnesses from Harrogate.

THE Board of Trade have recently confirmed the following light railway orders:—(1) Mansfield and District Light Railways Order, 1901, authorising the construction of light railways in the County of Nottingham, in the Borough of Mansfield, and the urban districts of Mansfield-Woodhouse, Sutton-in-Ashfield, Hucknall-under-Huthwaite; (2 Mid-Suffolk Light Railway (Amendment) Order, 1901 amending the Mid-Suffolk Light Railway Order, 1900; (3) Isle of Thanet Light Railways (Amendment) Order, 1901, amending the Isle of Thanet Light Railways Order, 1898; (4) East and West Yorkshire Union Light Railways Order, 1901, authorising the construction of light railways in the West Riding of the County of York, from Rothwell to Hunslet, and the working of the East and West Yorkshire Union Railways as light railways.

AT the council meeting of the Roads Improvement Association, held on the 25th inst., the following resolution was unanimously adopted:—"That the council of the Roads Improvement Association cordially approves of the recommendations of the Royal Commission on Local Taxation that one half of the cost of main roads in England and Wales shall be borne by the State, provided that the Imperial grant shall be made dependent on compliance with conditions designed to secure efficiency, and trusts that His Majesty's Government will give effect to the recommendations at an early date." It was announced that, since the last meeting of the council, subscriptions amounting to £106 had been received, including £60 from the Cyclists' Touring Club, £25 from the Automobile Club, and five guineas from the Stanley Club.

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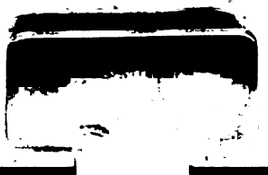

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